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TRANSACTIONS

AND

MONTHLY BULLETIN

OF THE

UNITED STATES

AGRICULTURAL SOCIETY,

FOR 1858.

EDITED BY BEN: PERLEY POORE,
Secretary of the Society.

WASHINGTON, D. C.
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FOR THE YEAR 1858—'9.

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Leavitt, jr., David.....*Gr't Barrington,* "
Leavitt, Shelden.....*Gr't Barrington,* "
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Pierce, Jacob W.....*Newburyport, Mass.*
Partridge, jr., H.....*Northampton,* "
Paige, James W.....*Boston,* "
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Potter, Joseph S.....*Boston,* "
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Proctor, Abel.....*Danvers,* "
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Phillips, J. S.....*Syracuse,* "
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Pierce, J. W.....*Boston, Mass.*
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Reynolds, John J.....*Wickford, R. I.*
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Randall, L.....*Syracuse, N. Y.*
Rice, John.....*Philadelphia, Pa.*
Ridgely, John.....*Hampden, Md.*

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Sanford, O. S.....*Cordaville,* "
Salisbury, Stephen.... *Worcester,* "
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Scott, R. W.....*Springfield, Ohio.*
Sherman, Duncan.....
Smyth, Frederick.....*Manchester, N. H.*
Sedgwick, C. B.....*Syracuse, N. Y.*
Smith, A. L.....*Syracuse,* "
Smith, G. P.....*Nashville, Tenn.*
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Talbot, S.....*Sec'y, Tremont, Ill.*

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Woodruff, Jason.....*Syracuse, N. Y.*

Young, Lawrence.....*Louisville, Ky.*

[Those marked with a (*) star are deceased.]

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SIXTH ANNUAL MEETING

OF THE

UNITED STATES AGRICULTURAL SOCIETY.

The Sixth Annual Meeting of the United States Agricultural Society, commenced on Wednesday morning, January 12th, 1858, in the East Room of the Smithsonian Institution, at Washington city. It continued in session three days, and was numerously attended by Honorary, Life, and Annual Members of the Society; by accredited delegations from State Boards of Agriculture, State and County Agricultural Societies, and Horticultural Societies; and by Senators, Representatives, and other distinguished officials. Gentlemen were present from nearly every State, and twenty-one States, two Territories, and the District of Columbia were regularly represented.

The meeting was well calculated to encourage the founders of the Society. Young, weak, and without any patronage from the General Government,—yet strong in hope of good to come, upheld and sustained by the voluntary efforts of scientific and practical agriculturists, it was evident that its course must be one of advancement.

A condensed report of the proceedings of this Agricultural Congress, appeared in the "*Monthly Bulletin of the United States Agricultural Society*" for January. It was there announced that a detailed report would be published in this volume, but as the Executive Committee have since decided to have the numbers of the

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Bulletin for 1858 bound with the Transactions, as an appendix, it would be a work of supererogation to re-produce here what may be found in another portion of this volume. The principal papers, however, of which abstracts only appear in the *Bulletin*, are published *in extenso* in the following pages.

The Executive Committee remained in session for several days after the Society had adjourned, and established a permanent office in the city of Washington.*

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*The Secretary would here acknowledge the regular receipt, at the reading-room, of the following Agricultural periodicals and newspapers which, with other newspapers, periodicals, and pamphlets, have been open to inspection during the year:

Periodicals and Papers.	*Places of Publication.*	*Publishers.*
Maine Farmer	Augusta, Maine	Dr. Ezekiel Holmes.
Journal of Agriculture	Manchester, New Hampshire	Gilmore & Martin.
New England Farmer	Boston, Massachusetts	Joel Nourse.
Real Estate Register	" "	W. Goward.
The Homestead	Hartford, Connecticut	Mason C. Weld.
The Horticulturist	New York	C. M. Saxton.
The Country Gentleman	Albany, New York	L. Tucker & Son.
American Agriculturist	New York	Orange Judd.
Genesee Farmer	Rochester, New York	Joseph Harris.
American Stock Journal	New York	D. C. Linsley.
American Farmers' Magazine	"	J. A. Nash,
N. Y. Observer (Ag. Department)	"	———
National Agriculturist	Pittsburgh, Pennsylvania	J. F. F. Wright.
American Farmer	Baltimore, Maryland	N. B. Worthington.
Southern Planter	Richmond, Virginia	J. E. Williams.
Virginia Farm Journal	" "	M. S. Crockett.
Farmer and Planter	Columbia, South Carolina	Mr. Stokes.
South Countryman	Marietta, Georgia	W. H. Hunt.
American Cotton Planter	Montgomery, Alabama	N. B. Cloud, M. D.
De Bow's Review	New Orleans, Louisiana	J. D. B. De Bow.
Ohio Valley Farmer	Cincinnati, Ohio	B. F. Sanford.
Ohio Cultivator	Columbus, Ohio	Sullivan D. Harris.
Prairie Farmer	Chicago, Illinois	Emery & Co.

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THE PRESIDENT'S ANNUAL ADDRESS.

BY MARSHALL P. WILDER.

Gentlemen: Another year of our existence has completed its course.

We now meet on the Sixth Anniversary of the United States Agricultural Society to report its progress, and to concert plans and measures for the future. While I congratulate you upon the success of our association, I unite with you in deploring the existence of a commercial embarrassment unparalleled in the history of our country. Here we have a visible demonstration of the importance of the great cause of agriculture in the fact, that in the midst of this depression, when so many of the other industrial arts seek lucrative employment and find none, when the fortunes and the hopes of many of our fellow-citizens are wrecked, and when the hearts of many more are failing them for the fear of trouble that may overtake them, where do we look for ultimate relief, for a power that can unfurl the sails of our late prosperous commerce, that can put in motion again our manufactories, our machinery, and freight the long trains of cars which lately traversed our innumerable railroads, creating profitable employment for millions, giving life and enterprise to all classes of society? *Where?* There can be but one reply to this question. For these results we must look to the products of the soil. True, there may be a diversity of opinion as to the cause of this great calamity. It may be ascribed to speculating and overtrading, to banks and to our system of banking, to our tariff and revenue laws, which for a long period have agitated the public mind and taxed the wisdom of our ablest statesmen.

But I have said, and now repeat what I believe to be the sentiment of the great American heart, that we must look to our abundant harvests, to our granaries and barns filled with plenty, for the speedy restoration of individual and national prosperity. We talk of the immense liability of individuals and corporations to foreign capitalists, and tremble at the thought of it. Those capitalists inquire with solicitude, How can this debt be cancelled? Farmers reply, take our crops in exchange for your fabrics, and we can give you corn and wheat enough to cancel the debt, and leave a comfortable supply for home consumption.

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How important then that Government should encourage and protect the American farmer by wise legislation, and by every means in its power. We rejoice, therefore, in the recent presentation of this subject to Congress by the Hon. Mr. Morrill of Vermont—in the increased patronage bestowed by the Government on the Agricultural Department of the Patent Office, especially in the laudable exertions of that department to collate and diffuse valuable information by its greatly improved Annual Reports, and to distribute the most desirable seeds in all parts of the country. We rejoice in these indications of progress, and in every approximation towards a result which we believe to be only a question of time—the establishment of a special Agricultural Department at the seat of Government, with a Cabinet office at his head. Most heartily do we rejoice in all these evidences of improvement. The cause of agriculture has been, and should ever be, dear to the christian, the patriot, and the philanthropist. The seed planted by the eminent men who have gone before us is now taking root, and it is our happy privilege to realise some of their fondest hopes. At no former period in the history of our country has the progress of Agriculture been so rapid. Great advances have been made in most of the arts of cultivation, but to no one cause are we so much indebted as for the relief which genius has brought to labor by the improved implements of husbandry.

In accordance with the recommendation of the Committee on Agricultural Implements, at the exhibition in Philadelphia in 1856, and presented at the last annual meeting, it was resolved that future awards in this department should be based upon a "*practical working trial in the field.*" As the season for the annual exhibition would be too late for the trial of Reapers and Mowers, the Executive Committee sanctioned a proposition from the Implement Committee to hold an exhibition of these open to competition from all parts of the country, at some convenient place, in the month of July last. Various applications were received, with different degrees of encouragement. Among these it became difficult for your committee, without personal observation, to fix upon a location. They confided this trust to their special agent and secretary, H. S. Olcott, esq., who examined the various points proposed, and submitted to the Executive Committee a report in favor of Syracuse, N. Y. His report was approved, the necessary preparations made, and the trial commenced on the morning of the 14th of July, and continued to

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the 20th. The weather was propitious, the number of entries large, the interest deep and general, and the importance of the result to the cause of agriculture inestimable.

The award of the judges upon the Reapers and Combined Machines was announced at the exhibition at Louisville. That on Mowers, we regret to say, was deferred to a recent date; the judges finding greater difficulty in coming to a decision. They have, at length, made up their awards, which will be found in the Transactions of the Society, and also in their report. The receipts from donations, entries, and other sources were sufficient to meet all expenses on the ground, and to defray the cost of the medals and diplomas awarded, which amount, with proper vouchers, has been paid into the treasury of the Society.

Much of the success of this exhibition is to be ascribed to the zeal of the respective competitors; to the enterprise and liberality of the good people of Syracuse and its vicinity, and to the superior ability and fidelity of the Board of Judges. An official report of this trial will be found in the Transactions of the Society for the past year. A separate edition of the report has been printed for general distribution.

More than forty machines entered the field, and an honorable competition was sustained throughout the trial. It was a sublime spectacle to see a score of these machines at work performing the daily labor of hundreds of men in a single hour. Nor was this a mere experiment, without any parallel in the actual labors of the field. A western gentleman informs me that at one time he witnessed one hundred and sixty-four reaping machines, followed by one thousand men, women and children, binding up and stacking the golden sheaves. It was a soul-stirring sight, said he, to see the grain falling and gathered up at the rate of two hundred acres per hour.

The wonderful improvements recently made in this department are but the harbingers of others still more wonderful. The day is at hand when the time-honored plow, perfected by the genius of centuries,—when the mighty mower and reaper, those astonishing productions of modern invention, which have made the name of America glorious in all the earth—when these, propelled by steam, shall roll majestically across our vast prairies and fertile vallies, to cultivate our soil and gather up our abundant crops.

These trials stimulate and guide inventive genius, give a wise direction to the skill and capital of the manufacturer, and illustrate the economy and great importance of labor-saving implements.

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It will be remembered that at the last annual meeting in this place, a proposition by Mr. Secretary Guthrie and Hon. Humphrey Marshall, in behalf of themselves and the Southwestern Agricultural and Mechanical Society, was made to hold the annual exhibition for the year 1857, in the city of Louisville, Ky. That proposition was accepted and referred to the executive committee, whose delegation visited that city and ratified the appointment of the necessary local officers for the execution of this plan. The exhibition commenced under the most favorable auspices on the 31st day of August, and continued six days. The weather was delightful, and the arrangements on the most liberal and magnificent scale.

The attendance was unusually large, considering the population of that city and its vicinity. It was characterised by the great number of delegations from Agricultural associations, by distinguished farmers and mechanics, by gentlemen of high official reputation, and by the liberality and enthusiasm of the good people of Louisville. The interest and attendance were well sustained from first to last. An amphitheatre so extensive, crowded for so long a period with congreated talent and genius, and adorned with female grace and beauty, it was never before my happiness to witness.

If the number of entries has been larger at some previous exhibitions, yet any deficiency of quantity was more than made up by the superior quality of the animals and articles on exhibition. Another interesting feature of the Exhibition was the continuation of the trial of implements in the field, and of machinery worked by steam power.

From the receipts of this Exhibition the Local Committees confided to your President, who has paid over to the Treasurer of the Society, a sum deemed sufficient to meet the expense of all the Medals awarded. The balance of the receipts was left in the hands of the Local Committees, who assumed the responsibility of paying all other premiums and expenses in accordance with the guarantee contained in the original proposition. The report of the Assistant Treasurer and of the committees on settlement of accounts, have just been received; but considering the large expenditure for local structures, it is doubtful whether any balance, resulting from the sale of these, will eventually be carried to the credit of the Society.

In the infancy of this Society, it was deemed necessary to its establishment and success that it should hold an Annual Exhibition. In this department of labor it has the last year performed double service, imposing upon its officers a demand for an unusual amount

of labor, responsibility and expense. Highly as I appreciate these gatherings, and important as I verily believe them to the cause of Agriculture, yet they have now been held in the Eastern, the Northern, the Central, the Western, and Southwestern sections of the country. These have increased the popularity and efficiency of local associations; they have extended the area of friendship, and promoted a more general intercourse among cultivators in all parts of the republic, and have encouraged the National Government by our interviews and meetings, in this city, to laudable endeavors to enlarge its sphere of usefulness. They have given us a name and favorable position, both in this country and in Europe; and would our government grant to us the same fostering hand that the States extend to agricultural associations within their respective bounds, it would be deemed both judicious and practicable to continue to hold at least one exhibition every year. But, for the want of that aid, and in the present financial crisis, I respectfully submit whether this, for the present year, be expedient, and would recommend that all applications for the next exhibition be transmitted to the Secretary, and the question of time and place be submitted to the Executive Committee, with full power to act in the premises. In case no exhibition should be held the present year, the Secretary would, in the mean time, have an opportunity to bestow more attention to the business of his office, to conduct the correspondence with increased efficacy, and from these, to gather materials for our annual volume, which may be issued either monthly, quarterly, or at the end of the year, as expediency and the welfare of the association may require. In this way a new interest might also be given to this volume, by elaborate articles from the pens of distinguished scientific and practical agriculturists on subjects previously assigned, and which would be of great and general utility.

In concurrence with the Committee on Agricultural Implements, the Executive Committee confided to the President the securing a proper design of a Die for Medals to be awarded in certain cases to successful competitors, instead of money. The design was drawn by Hammat Billings, of Boston, and the Die is in process of execution by Francis Mitchell of that city. I had confidently hoped that the Die would have been completed and the Medals ready for distribution at this meeting, in accordance with a previous notice. I regret, however, to state that some delay has been providentially occasioned by the indisposition of the artists, but the work is now in rapid progress, and will soon be executed. Immediately on its

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completion, advice will be given to the successful competitors, and their Medals and Diplomas will be transmitted to them by the members of Congress from their respective districts, or in such other way as they may elect.

Among the occasions for gratitude and joy, I recognise the fact that we meet here to-day many who took an active part in the formation of this Society, and have constantly contributed to its progress by their presence, co-operation, and wisdom. But all are not here! We are particularly impressed by the absence on this occasion of Thomas J. Rusk and George Washington Parke Custis, Vice-Presidents of this Society, and active from its formation, both of whom have been removed by death the past year.

Gen. Rusk emigrated from Maine to Texas previous to the Revolution which dissolved the allegiance of the latter State to Mexico, and in which he performed active and honorable service. After the admission of that republic into the Union he represented Texas two terms in the Senate of the United States, and was at the time of his death elected for a third. He evinced, in a remarkable degree, kindness with decision, urbanity with fortitude, chaste expression with wise counsel, and thereby secured great popularity with his constituents, and the high esteem of his associates and countrymen. He was a staunch friend of this association and of American agriculture; and those of us who have met him in this hall will not soon forget the influence of his presence, and the attention and respect which his voice commanded in our deliberations. Long will his name be held in grateful remembrance!

The venerable Mr. Custis was well known to us as the "Farmer of Arlington," an honorable title conferred upon him on this platform by Daniel Webster, at the organization of this Society, and one by which his name will descend to posterity. He was present at each of its annual meetings, occupying a seat on the right of the chair; and at the close of each pronouncing, by my request, a farewell address and benediction. By his death, the last representative member of the immediate family of the immortal Washington has passed away. His politeness, suavity, his generous hospitality, his addresses and literary productions, his historical paintings of prominent scenes in the life and conflict of the Great Chieftain; his rural taste, and particularly his devotion to this Society,—all these embalm his memory, and give an unfading lustre to his fame. The following were his touching and prophetic words at the close of our last meeting:—

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"The time has come for me to say,—*Farewell!* And when a man, on whose head rests the snows of seventy-six winters, bids you farewell, the probabilities are that it will be a long farewell. You will now return to your homes with hearts cheered and hands strengthened, by this mutual communion and this brotherhood of farmers from all parts of our great country. And you will come up to our National Capital another year, each one with fresh cause of encouragement for the rest, each one with more information, the result of the year's observation and labors, which he will interchange with his fellows, and thus scatter broadcast over the land. And as you come up from all portions of the country—from those classic grounds where our fathers died—let your hearts be invigorated by their patriotism, and your hands labor for the prosperity of the country they bought with their blood.

"And now, Gentlemen of the United States Agricultural Society—Farewell! Go back to your homes and tell your friends what has been done at this meeting for the cause of Agriculture, and encourage them as you have been encouraged. Continue your devotion to this bulwark of our country, continue inviolate our great Constitution, obey our self-imposed laws, preserve our blessed Union, and our Republic will be IMMORTAL!"

Gentlemen of the Society,—Men die, but institutions live. Several of the founders of this Association have already passed away, and their departure calls upon us for renewed diligence and activity. I have most cheerfully endeavored to bear my full share in these labors and responsibilities. For six successive terms you have honored me with your confidence as President of this Association,—an office which I esteem as one of the highest and most honorable that could be conferred upon me. For each of the last two years I have tendered you my resignation, but have yielded to your urgent solicitation, and have discharged the duties of the position at great personal sacrifice and to the best of my ability.

Among the considerations which have prevailed with me was a desire to reciprocate your kindness, and to conform my action to your judgment,—that my official service was important to the establishment and success of our Society. These objects have now been accomplished. The United States Agricultural Society is a recognized national institution, co-operating harmoniously with the other agricultural associations of the country, and cherished by the warm affections of the American people. Wherever its exhibitions are held we are sure to meet, not only gentlemen of all professions,

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but thousands of our intelligent yeomanry. The Society has now attained a standing that will ensure its perpetuity and usefulness, and a name that will descend to future generations. My resignation, therefore, which I now, for the third time tender you, cannot be prejudicial to its interests. New and imperative motives urge me to this measure. As the financial partner of a large commercial house, I cannot for the present abstract the time which I have heretofore devoted to your service, and yet faithfully discharge my multiplied duties in that relation. Besides, I cannot disguise from you the fact that my health has recently been seriously impaired and my life imperiled by the onerous duties of numerous official positions, superadded to those of my legitimate business. Some of these I must sacrifice, and I think I may now, without fear or reproach, be permitted to express my fixed determination not again to be a candidate for re-election.

By this proposal I seek temporary relief, for my heart will still be with you and I shall beg ever to be recognized as an active member of this body. I shall never cease to cherish the most ardent desires for your individual happiness and for the prosperity of the Society; and should the time in future arrive when my services in this or any other capacity may be required, and when a due regard to my business relations, my family, and my own health will permit me to render them, I shall most cheerfully respond to your call.

In conclusion, gentlemen, permit me to congratulate you upon the beneficial influence of our Association and the results we have already attained. Our anniversaries at the seat of Government and our annual exhibitions have awakened an extended and general interest in the great cause we seek to advance. They have acted as a stimulus to enterprise, mutual instruction and improvement, and have promoted a more cordial intercourse and a closer alliance between cultivators, and the various local agricultural societies of our own and other lands. They have aided in developing the vast natural resources of our country—in elevating the vocation of the farmer to its true dignity, and impressing on the public mind the importance of the great interest of American agriculture and of its protection by governmental patronage.

Never before in our national existence has this idea been so forcibly illustrated, because the present commercial emergency turns the thoughts of men back to the primeval source of individual wealth and prosperity, the world-sustaining art of agriculture,—

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and because the application of science to this art is just beginning to produce its sublime results, multiplying our products a thousand fold, relieving the burden of toil and hastening the golden age, the millenium of agriculture,—when, with the blessing of heaven, the cultivator of the soil shall witness the fulfilment of his noble mission as a co-worker with God in enriching and beautifying the earth. Let us then look forward with full assurance to this blessed consummation—the crowning felicity of participating more and more in the secrets of that wonder-working Providence, which causes the dust on which we tread to bring forth its fruits and flowers in endless variety and richest profusion, for the sustenance and comfort of man. Let us then take fresh courage, redouble our efforts, and speed the car of improvement in its advancing course. Onward bid it roll—till all the arts of rural life and cultivated taste shall have attained their final and glorious accomplishment—till from East to West, from North to South, our country, our *whole* country shall rejoice in the triumphs of perfected husbandry, in the blessings of universal peace and prosperity:

> "Till plenty rising from the encouraged plough,
> Shall fill, enrich, adorn our happy land."

THE LATE VICE PRESIDENTS RUSK AND CUSTIS.

BY GEORGE B. LORING.

Mr. President: I wish (as the hour for to-day's adjournment approaches) to offer a few remarks. Since our last meeting distinguished members of the Society have passed away, and among the most valuable of our historical records is the testimony they bore in their lives to the dignity of the cause in which we are interested. No higher tribute to the lofty position which agriculture holds in society and in our civil organization can be found than in the alacrity with which the statesmen of all ages have referred to her as the foundation of the firmest national existence. It is at her feet that the illustrious are glad to lay their honors, and to feel that in recognising her they give increased distinction to themselves. In reviewing the past year, my mind is attracted to one who came up here as the representative of a great agricultural section of our

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country, and who never forgot the importance of his young and growing State in the advancement of our republic. His fidelity to the Union was a guarantee that the toil and enterprise of States remote from his own should always reap their reward, so long as the reciprocal interests and fraternal feeling of all the members of our confederacy should endure. Not for his own people alone did he watch with untiring care their growth in wealth and elevation, but for the honor which it conferred on his nation, and for the prosperity it promised every enterprise in our land. He felt that a thriving agricultural population on our western frontier furnished a market for the manufactures of the East, which would give a permanency to our prosperity and a bond to our citizens which no civil commotion could ever destroy. In rising, by intelligence and honor and honesty, from the humblest walks in life to the high seats in the councils of the nation, he taught men the capacity and opportunity of an American citizen. And coming, as he did, from the furthest of our settlements, a patriot and a statesman, he bore himself honorably as an illustration of the vigor and strength which the yeomanry of our frontiers will always impart to our republican institutions. In bestowing her honors upon Mr. Rusk, the new State of Texas brought herself into closer alliance with her sister States, and gave to our nation and to the great calling of our people to which our Society is devoted the ornament of a pure and honorable life.

Neither can the members of this Society forget the venerable form of the last member of the family of Washington, who has, until this year, given peculiar interest to our meetings. Representing, as he did, the great chieftain whose cares were never so pressing as to expel his farm from his memory, and whose affection always bore him from the oppression of active life to his broad and beautiful acres, he cherished, encouraged, and elevated our deliberations, and reminded us constantly that the greatest champion of freedom the world has ever known, was a devoted and successful farmer. Allow me, sir, to offer the following resolutions:

Resolved, That the United States Agricultural Society lament the loss of Hon. Thomas J. Rusk, of Texas, by whose decease the cause of agriculture has been deprived of a firm friend, and the nation of a patriotic and enlightened statesman; and that, while we sympathize with his friends and his State in their bereavement, we would remind them of the monument he erected to his memory during life, and of the legacy he bequeathed to them, in the multitude of his virtues.

Resolved, That as American farmers we cherish the memory of George Washington Parke Custis, as an ornament to our Society, and as the bond which connects us personally and intimately with the illustrious founder of our government, and with the wisest and most distinguished of the cultivators of our soil.

Resolved, That copies of these resolutions be forwarded to the families of the deceased, and that as a last mark of respect this Society do now adjourn.

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STEAM PLOUGHS IN ENGLAND AND FRANCE.

BY HENRY F. FRENCH.

I am unexpectedly called upon, Mr. President, to make a report of what I saw abroad, as a delegate for the United States Agricultural Society. I have had no intimation whatever that such a call would be made, and I have made no preparation to respond to it. Still, if the Society have leisure, I will make a verbal statement of what I heard and saw abroad. I was honored by the Society as its delegate to any agricultural societies abroad who would extend their hands to this, and it was but proper for me to say that I was everywhere treated with the most cordial respect, courtesy, and kindness. [Mr. F. here incidentally remarked, in answer to a newspaper statement to the contrary, that the expenses of his mission has been borne at his own private cost and not at that of the Society.] The Agricultural Society of the county of Suffolk, in England, received me as a delegate from this Society, treated me with marked respect, and honored me with a call at their table to respond to a complimentary toast to the United States Agricultural Society. The same may be said of the Royal Agricultural Society, which had its meeting at Salisbury, and of the Irish Royal Agricultural Society of Waterford; and I hope that whenever a member of the United States Society may meet an Englishman, a member of those societies I have named, he will reciprocate the courtesy so abundantly bestowed on me as their delegate abroad. From the first moment an American sets his foot on English soil, he will see something to arrest his attention, and that attention will be employed and absorbed till the moment he leaves it. He will see new things at every turn to describe, which would take almost as much time as to see them. I will therefore refer at this time to but a single topic, viz., steam-ploughing. But I disclaim any technical acquaintance with machinery, and therefore must be excused if my descriptions are not scientifically correct.

At Ipswich, in England, on the fourth of July, 1857, I saw in operation Fowler's Steam Plough. Having previously seen at the workshop of Ransom & Simms the same implement, and having had its principles of operation carefully explained, I spent several hours with it, while in actual work upon a large field, where it had

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already ploughed many acres. It was, while I observed it, turning furrows seven inches deep, by about ten in width, carrying three at a time, and performing its work as well as it could be performed in the usual way with horses. I carefully paced out the length of the furrows, and measured their depth and width, and with my watch in my hand timed the operations, and ascertained that the machine was then ploughing one acre per hour.

The arrangement was to use four ploughs, and open four furrows at each passage across the field, and in that way the labor accomplished would be one-third more. It is difficult, without drawings for illustration, to describe intelligibly the details of such an implement, but its general plan of operations may be readily understood. The ploughs are arranged in two gangs of three or more, one gang at each end of a heavy frame work, which is balanced across an axle, supported by two large wheels, like those of a heavy gun carriage. This frame work, with the ploughs, is drawn across the field by a stationary engine. As it is drawn northerly, for example, in its work, the frame which carries the ploughs is borne down, so as to lift the gang of ploughs at the northerly end high in the air, bringing down the southerly end with its ploughs, so that they enter the soil for ploughing. The depth is guaged mainly by a large wheel at each end of the frame work, opposite the ploughs, which wheel is in turn lifted into the air, or brought down to the surface with the gang of ploughs to which it belongs.

Two men sat upon the machine, one to guide its motions by appropriate machinery, the other to make signals with a flag, or do any other useful work that occasion might require.

The engine in use was upon one side of the field, and was called a stationary engine. It was drawn to the field by horses, but had powers of locomotion sufficient, I think, to move itself along the head land. The plough was drawn *toward* the engine by a wire rope, which was wound round a cylinder attached to the engine. It was drawn *from* the engine by a wire rope which passed across the field round a pulley made fast at the opposite headland. The pulley was held by what was called an *anchor*, which anchor was in the shape of a low wheeled cart or car, loaded heavily with stones. The wheels of this car were of iron, and sharp at the edges, so that they cut down nearly to the axle. This anchor was drawn along the headland by a windlass worked by a man, in a direction at right angles with the furrow, so that the strain upon the pulley was across the track of the wheels. In justice to the inventor, it should be

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stated that he had already, it was said, constructed machinery to be worked by the engine to move the anchor, and so dispense with the man at the windlass.

It will be seen at once, that this machine could only be of practical utility on level, clear fields of large extent. It could be used only upon level fields, or rather fields of uniform surface, because the ploughs are set in an unyielding frame, and must run at the same level, thus running deeper across a hillock, and more shoal in a small depression. They are arranged, not so as to be raised and depressed, each separately, as the machine is moving, but the whole gang are acted upon at once. Again, the machine would be of no use in a small enclosure, because of the broad headlands requisite to accommodate the engine on one side, and the anchor on the other.

It could be of little use in a field obstructed by stumps or roots, or stones, because of the inequalities of surface produced by them, and because, if one of the ploughs meets an obstruction too obstinate to yield, the power of the engine must generally be sufficient to break the plough, or what is more common, the rope. The breaking of a plough must involve, at least, the necessity of a delay sufficient to detach it and substitute another, and such a delay, of so large and expensive a force as we shall presently see is employed, must be of considerable importance. The breaking of the rope, which I was informed by the workmen was of frequent occurrence, is soon remedied by splicing it, but it is probably a constant source of annoyance. As, however, it is impossible to foresee all obstructions, and the engine must exert great power, it is perhaps best to make the rope the weakest part of the machinery, as it is the most easily repaired.

The force employed in this operation, as I witnessed it, beside the engine, consisted of five men and a boy: to wit, the engineer, who remained by the engine, a boy to carry coal, one man upon the plough to manage it, another man who rode part of the time on the plough, and who ran along before it to remove pulleys or rollers, over which the rope traversed to keep it from friction on the ground, another man to tend the windlass and anchor, and the other to keep the rope in place with a crowbar, that it might wind properly round the drums of the engine. In estimating the value of such an implement as this, there are certain elements always to enter into our calculations: 1st. the amount of labor performed: a span of horses and a ploughman would in England plough, as a regular day's work, one acre of such land as that under experiment. They would work

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six hours without feeding, and in that time complete the day's work. This is the practice, I think, in most of England as to working horses. Six ploughmen and twelve horses, then, would for six hours perform the same work as the five men and boy and the engine, and all the machinery. But the engine would not be fatigued, but might labor on while the horses must rest. Still, taking into account the liability of complicated machinery, and of so great a length of rope to accidents, which must cause delay, perhaps the steam plough could hardly be expected to be actually at work more hours per day than the horses. 2nd. The expense and time employed in moving the engine and plough and anchor, on the field of operation, aud placing them in position. I did not see the engine or machinery moved by horses, but this item is worth a place in our estimate, both as to time and expense. 3d. The cost of working, which has been already partly considered; but there is to be added to the cost of the labor already named, the expense of supplying the engine with fuel and water. Both the coal and water are of heavy freight, and must be conveyed to the engine by horses and men. Their cost at the field must depend so much on location, that it is useless to attempt an estimate. Probably an additional pair of horses, and a man, would be employed to furnish the meat and drink of the giant steam. 4th. The cost of machinery and of repairs upon it. It was said that this engine and plough could be furnished ready for use for £500, or $2,500. It would require an engineer to estimate the cost of repairs. Unless the machine could be kept in constant use, the interest on its cost would be a heavy item, and in all cases must be a constant element to be regarded. The engine would be adapted to other farm labor, such as threshing, grinding and the like. Such engines are in constant and extensive use for threshing throughout England, on large farms. The inventor of this steam plough had taken a large contract to plough for several proprietors, a practice which perhaps should be kept in view in this discussion, though the difficulty of moving the engine from farm to farm in this country would be far greater than in England, because our roads are not so well made.

Upon the best estimates that I have been able to make, it seems to me that Fowler's Steam Plough can never be made an implement of general practical utility, either in this or any other country. Perhaps a more competent person, with such data as have been furnished, may form an estimate more favorable. Simplicity is

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usually economy, in agriculture especially, and there does not seem, upon the theory of this machine, any such promise of performance as to compensate for the great expenditure in its structure, and the numerous obstacles to its practical operation.

A large premium has been offered by the Royal Agricultural Society for a useful invention of a steam plough, and under this stimulus three competitors entered the field, at their exhibition at Salisbury, in England, which I attended in July, 1857. Fowler's Steam Plough, which was one of them, has already been described. Another called William's patent, drawn by a stationary engine with ropes, and guided partly by a horse, in a pair of shafts, appeared not to satisfy the exhibitor himself in its operations. It differed from Fowler's in this, that it had to be turned at the end of the furrow, instead of running back and forth with a double set of ploughs. All the objections to Fowler's Plough seemed to apply to this also. The third, operating on an entirely different plan, deserves a more particular notice.

Boydell's Patent Traction Engine, as exhibited at Salisbury, was operated to draw six ploughs, opening six furrows at one passage across the field. It is distinguished from the other steam ploughs that have been mentioned by being worked by a locomotive instead of a stationary engine, which walks over the earth like some huge animal, puffing and snorting, and taking along its six ploughs, with no apparent consciousness of effort. It possesses another peculiarity—that of laying down an endless railway track for its wheels to run upon, and taking it up as it proceeds. Attached to the wheels of the engine are large, flat blocks, six to each wheel, like rackets on a horse, to keep him from sinking in soft ground, which are laid down in turn by the wheel in its revolution, and on which the iron rim of the wheel runs. This engine walks about in a very intelligent sort of way, comes on to the field from a common road, drawing its tender with coal and water, and even carries the extra clothing and dinner of the laborers. It turns readily at the end of the furrow, stalks off to its water-tank when it is thirsty, and helps itself to water, and when it is hungry or fatigued goes for its own coal for refreshment. It is claimed that the same engine can draw your timber to market or the mill, upon common roads, haul in your hay and grain, work your threshing machine, and in short do most of the work of the farm instead of horses. This machine was not, at Salisbury, doing so good ploughing as Fowler's, but the quality of the work is not at present of much importance.

It is not a question of mere ploughing, it is a question as to the best mode of applying the power of the steam engine, whether as a stationary or locomotive engine; for it is obvious enough that when we have once found a convenient and economical power, ploughs, harrows, digging machines, or anything else may be worked by it. Boydell's engine is guided by a driver, who sits on the forward part, while the engineer rides like a footman behind. Three double ploughs were at Salisbury, attached to it by chains, and these were held by three men, who walked, following and holding the ploughs in the usual manner. Many of the objections to the stationary engine are obviated by this invention. No horses are required to move it from place to place, or to draw its supply of fuel and water. The cumbrous "anchor," with the long ropes used by Fowler, are here dispensed with; and if the adjustment of the ploughs as used by Fowler is found most convenient, there is nothing to prevent its adoption, and the drawing of his ploughs, with this locomotive engine. The following extract from *The Railway Record* of June 20, 1857, may be interesting, as showing the practical working of this engine, and the probability of its application to agricultural uses:

"We publish to-day the journal of the trial of Mr. Boydell's Traction Engine, on its endless railway, from Thetford in Norfolk to London. a distance of about eighty-five miles, with a train of carriages, containing about seventeen tons of goods, which it brought up, upon the ordinary road, at a rate of three and a half miles per hour. The train was ninety-five feet in length, and the engine twenty-seven, and the gradual ascent in many parts was one in fifteen, and at various points the road was newly laid with rough flint and gravel. We are so satisfied that it is only necessary for the actual performances of this engine to be generally known to lead to its adoption in localities where the cost of constructing a level locomotive line would be too great, that we especially desire that the 'journal of the trial between Thetford and London' should be carefully read by all practical men. Hitherto the traction engine has been better known in connection with the agricultural interest, but here we have its application to the traction of merchandise on common roads."

All the steam ploughs that have thus far been described, are constructed upon the idea that the old principle of the plough which shall turn a furrow of a few inches, subverting the soil, and preparing it for more perfect tillage by means of harrows and the like, should be employed. Yet everybody admits that spade-cultivation is far more perfect than that by the plough; and the fact that we never regard the soil as properly prepared for the seed by the plough alone, indicates pretty strongly that some more thorough operation than mere ploughing is desirable in any implement moved by steam.

In the progress of all arts and sciences it is observable how principles at one time deemed most vital, come afterwards to be regarded as of secondary importance, and still later again assert their

original claim to attention. Pulverization of the soil was more than a century ago advocated by Jethro Tull as the one essential to good husbandry, and he even regarded manure as valuable only as assisting to pulverize the soil, by fermentation. In later years chemistry has assumed a conspicuous position in agriculture, and many have been inclined to regard more the constituent elements of plants and of artificial manures than the mechanical condition of the soil; like quack doctors, whose attention is so much occupied by their specifics that they entirely overlook the condition of their patients.

But now, after the practical failure of the theories of some distinguished chemists, agriculturists are again disposed to regard the physical condition of the soil as of primary importance, and the operations of draining and sub-soiling, and otherwise opening a greater depth of soil to the action of the atmosphere and to the roots of the plant, engage the attention of the farmer. As land becomes more valuable it is found more convenient to add another seed bed to the field by preparing it *under* the shallow furrow turned by our fathers, rather than by annexing our neighbor's farm, in the covetous desire to possess all the land that adjoins our own. And so we are looking for more power to work our land deeper and to pulverize it more thoroughly. In England, four or five ploughings are considered essential to preparation for a good crop of turnips. In America, where labor is more costly and products usually cheaper, we the more need some new aids to our husbandry. Livy says that Romulus, in his distribution of the land, allotted two acres to each citizen, and that after the expulsion of the kings it was increased to seven. Columella tells us that the patrimonial estate on which Cincinnatus employed himself consisted of *four acres!* Yet we, whose single farms are larger than the city of Rome, with her seven hills, are plodding along, bound to the old notion that the plough used by the Romans, or at least its principles of operation, must be forever preserved. Every one knows how much better is the preparation of the garden by forking up and raking, than by turning with the plough and harrowing; and the implement desired now, in place of the plough, is a forking or digging machine that shall at one operation stir the ground to sufficient depth, leaving it as nearly as possible in the condition of a garden bed, prepared with a fork. Such a machine has been attempted in France.

In a walk near Paris last July, I accidentally came upon a steam cultivator or digging machine in full operation. It was a locomo-

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tive engine, with, I think, twelve spades or forks, working in pairs on bent axles, from which the spades, if they may be so called, projected at right angles. My impression is that each pair of spades struck the ground and entered it separately, each of the six pairs successively doing its work, as the locomotive traversed the ground, and thus forking up the soil to the depth of six or twelve inches, at the will of the operator, and four and a half feet wide. The machine was under examination by some commission at the time, and I was informed that no report had yet been made upon it, and no patent secured, and that no description or drawing of it could be obtained. I took a great deal of pains afterwards to obtain further information; and from my inability to do so, inferred that there were reasons why the inventor desired, at present, that his machine should not be made public. I was told upon the ground, that the engine was only of three-horse power, but its performance indicated far more. It moved upon broad wheels, however, over the soft ground which had been before stirred by it, and turned without difficulty at the end of the furrow. The spades, I think, were upon three or more independent axles, and worked between the wheels of the engine. Doubtless the invention will soon be made public, and the full description of it given to the world. With my very limited knowledge of machinery, and my inability to converse on a technical subject in the French language, I could not understand its details, and find it impossible to convey more than a general impression of the working of this machine. Steam digging machines constructed with spades or teeth set in a cylinder have been before attempted. The great obstacle to their success has been found in the fact, that the moist earth clogs the teeth, and fills the spaces between them. In the French machine, this objection appeared to be obviated by the arrangement of the teeth or spades, which were curved like the nails of a mole, upon several small axles.

No steam plough that has come under my notice appears so likely to prove of practical utility as this French machine. Two points seem to be established, that the steam cultivator must be a locomotive, and that its operation must be not that of ploughing, but of spading or digging, or possibly of stirring merely, by drawing through the soil a set of teeth, in the manner of the sub-soil plough, or of the English scarifier.

That such an implement will, upon the broad fields of the West, if not elsewhere, soon be seen in common use cannot be doubted.

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To see clearly, as all must see, the necessity for such an improvement, and at the same time to have before us so many practical suggestions for its introduction, and to doubt of its ultimate success, were to set narrow bounds to human ingenuity, and to discard our belief in human progress.

ON THE APPLICATION OF CHEMICAL SCIENCE TO AGRICULTURE.

BY THOMAS ANTISELL, M. D.,

(Professor of Chemistry in the Medical Department of Georgetown College.)

Agriculture does not yet deserve the title of science. It is still an art in which comparatively little is known with certainty, and which has not kept pace in the rate of improvement with other useful arts: like the latter, chemical science has of late years been applied to it, to relieve it from the chaos in which its phenomena were involved, and to endeavor to connect causes and effects together in some certain and well understood relation. In consequence of the partial light thus gradually afforded, various views affecting vegetable growth, and the relations of plants to soils, have been adopted and discarded by turns: thus the theory of rotation of crops, supported by Dutrochet and Decandolle, was supplanted by chemical analysis applied to the soils. The necessities of soil analysis disappeared before the special manure views of Liebig, which, in turn, have lost much of their influence.

Occupied as the writer has been since 1840, with analyses of soils, the value of which was then brought prominently forward by Liebig, and having made from that period to the present time nearly 2,000 analyses (certainly above 1,800) of various soils, both of this country and of Europe, he is glad on the present occasion, after an experience of nearly 20 years, to state his conviction of the value of the present relation of chemistry to agriculture.

In 1840, an ardent believer in the value of analyses of soils, every years' experience has tended to shake his conviction in its utility as carried on, and confirmed him in the belief, that it was both incomplete in its object, and deceptive in its result. That ardent belief has merged into sober caution, and has ended in positive distrust, that a mere chemical analysis of the soil can be of any, even the

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smallest use to the farmer, for he has come to understand that the constitution of a soil is not that simple matter formerly believed: so complex is it, that no analytic formula properly expresses it, and as usually performed, the analysis is of no value, either to science or to practice. The farmer is not able to say from inspection of it in what it really is either deficient or redundant; and when special manures are recommended by the chemist, it is done by taking into consideration what the crop requires—it is done by *having regard to the wants of the plant*, rather than the defects of the soil.

It is repeated, therefore, that honest or trustworthy information cannot be afforded by the examination of soils. Chemical analysis may detect the presence of noxious mineral or organic matter, or the absence of one ingredient in large amount. But it can do little more: its results are merely negative, and by leading the farmer to trust in the chemical constitution of the soil, it deceives him; and hence, this great truth, "that the improvement of soils is mainly effected by physical means," is too much distrusted or forgotten.

In asserting that the value of chemical analysis of soils has been much overrated, as well by writers as by others, he does not wish to deny the value of chemistry applied to elucidate the phenomena of vegetable growth. Undoubtedly, the application of chemistry to agriculture is best promoted by directing attention to what it is which plants remove from the soil as mineral matter, of what nature and amount such matters are, how they are regulated by operations of nature and art, and how they may be economically and abundantly supplied.

Manuring is still too much carried on as if it were to benefit the soil—instead of the plant—and the farmer enriches his soil with elements in manure, which he does not know whether his crop requires at all, or requires at the time when it is added.

The *art* of manuring arose from a sense of the necessity that a soil should be ameliorated, by additions made frequently to it, without any clear idea of what these additions should be. The *science* or philosophy of manuring recognized the necessity of supplying the roots of plants with such substances as belong unalterably to its constitution as individuals.

The question then arises: Do we know sufficient of the mineral constitution of plants, so as to state what that constitution precisely is in each species? We must in truth say we do not fully know

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the exact mineral formula of any plant: and yet as far as we do know, it would seem that a species differs somewhat from every other species, in either the quality or the quantity of its ash.

If we do not know these constituents of a plant, how can we safely recommend special manures? Thus, the practice and the prosperity of the art of agriculture depends so far on the knowledge which chemistry has yet to impart to the farmer. That we have not this knowledge may be shown you by a few examples taken almost at random:

The use of gypsum as a dressing for clover is older than Franklin and Seibert. How has its action been explained, and is it thoroughly understood yet? At various periods it has been deemed useful for several reasons, viz:

a. for its supply of lime.
b. for its sulphuric acid.
c. then because the whole is a necessary element of food.
d. then because it was a stimulant.
e. then because it eliminated carbonic acid.
f. finally, because it fixed ammonia.

The saline matters which exist in plants, from being looked upon as accidental are now deemed necessary. But even where the per centage is constant, the ingredients vary; nor can we say accurately what is accidental and what is essential. This will be better understood by contrasting the mineral matters of a plant with the crystalline mineral. Take calc spar, carbonate of lime, of which the varieties are above two hundred; yet it is possible to note the deviations of all, because they all can be included under one formula of lime united with carbonic acid, viz: $Xo=28+Co_2=22$, where Xo represents not only the lime, but also the variable proportions of other metallic elements causing the difference. Or, instance the formula of alum: $KO\ SO_3+AL_2\ O_3\ SO_3+HO$ the potassa alum; and $MOXo_3+M_2\ O_3+3Xo_3$ represents the general formula where other metals and acids may replace the above, provided they belong to the same family.

Now, of the many hundred analyses made of vegetable substances, there is not one of which we can yet give a formula, and until we can we do not thoroughly understand what is the food of plants, or what should constitute a manure.

Take one of our most common plants—wheat. What do we certainly know of the amount of its ash, either of grain or of straw.

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The following various amounts have been given by these analysts:

STRAW.		GRAIN.	
4.3	Saussure	Boussingault	1.75
3.5	Sprengel	Emmons	1.45
15.5	Davy	Johnston	——
4.4	Berthier	Way	3.
6.6	Johnston, on clay	Way (m'n of 40 analyses)	4.50
12.15	Do. calcareous soil.	Peligot (14 analyses)	1.65
16.05	Do. do. same field.	Horsford (3 analyses)	2.80

Thus the extremes of the ash of the grain are 1.20 and 4.50, and of the straw 3.5 to 16.05.

In this wide range of variation what is the certain knowledge which we have of wheat requirements? Yet all may be right among the later experiments, the difference being due to period of growth and other circumstances.

Take corn as an example:—

Payen gives the inorganic salts as					1.2
Dana	do.	do.	do.		1.31
Johnston	do.	do.	do.		1.3
Bizio	do.	do.	do.	(German)	1.92
Gorham	do.	do.	do.	(Vienna)	.86
Emmons	do.	do.	do.	young ker'l, Aug. 11	.758
Do.	do.	do.	do.	old kernel, Sept. 1	.240

The discrepancy which exists concerning the composition of plants appears, after deducting minor oversights, to have its origin in a fact which appears to have been too much overlooked in all the discussions.

It has been assumed that our plants grown for food are placed in natural circumstances. Writers constantly assert that a plant growing healthily and in a fertile soil contains the same amount of ingredients.

But is that to be considered a healthy growth, which constantly requires to be cared, tended, and fed, lest it cease to grow, or grow irregularly. What is tillering and degenerations in cereal crops—formation of finger and toe in root crops, but attempts, and often successful ones to degenerate, that is, to return to their native condition—and an attempt to get free from the artificial restraints of civilized agriculture?

Hence it is, that the farther from a latitude which is natural to the species it be removed, the more will it tend to degenerate, and

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the more will its demand on the mineral matter of the soil vary. Dr. Anderson, the successor of Johnston, has shown us the difference between the results of the same wheat seed sown in Warwick and Ayrshire, a difference of 4° latitude, the former containing one-half more solid matter. Yet the total ash per cent. remains the same, while the phosphates are increased in the southern crop in the rates of 9 and 10 to 5. The difference of climate is here very remarkable, for climate is the chief cause.

The foregoing are but a few of many results which tend to show that the propositions above alluded to, and frequently asserted by agricultural chemical writers, have but a limited range of truth, and we admit their truth so far as the addition of the following proposition may seem to limit and explain them:

"The nature of the inorganic constituents vary both in quantity and amount in various parts of the same plant, and in the same plant at different ages, and in different soils—and this variety of saline matter entails a corresponding variety in the organic matter in the food elements produced by the plant."

The proposition which was desired to be established as a fundamental one by Liebig, is this: that plants of the same species cultivated under like telluric conditions, contain the same per centage of mineral elements, and the constituents in the same ratio. This is true only of the uncultivated plants, and is at variance with the numerical results given above.

Culture places the species in an anomalous condition, and the result is an abnormal excess of some of the organic portions of the plant, accompanied by a corresponding alteration in the *ratio* of the mineral elements to each other. It does not appear that the total per centage is altered, but merely that certain ingredients enter in enlarged proportion.

The variation is determined by the soil, the climate, and the operations of the farmer.

An additional proposition is therefore required to express this change:

"In cultivated plants, while the total mineral matter bears an uni-
"form per centage to the organic matters, certain mineral ingredi-
"ents preponderate to the removal of others varying with the amount
"of cultivation, the favorable telluric circumstances, and always
"accompanying a corresponding increase of a proximate organic
"principle in the plant."

That the saline constituents vary in nature and amount at differ-

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ent periods of the growth of the plant, is a conclusion not appreciated in its full value; for if so, what are the substances which thus appear at distant periods and in different parts; can we supply the desiderata; can we develope parts of plants at the expense of others; can we keep a plant in full leaf by nitrates, extend its growth by potash, prolong its life by ammonia, and shorten it by lime?

The cultivation of the beet in France and Ireland appear to have nearly fully answered this question. For while an average of 11 to 12 per cent. of sugar is yielded by the plant, it is only so yielded during its later growth—the sugar at the beginning of September, averaging only 5½ per cent., while that at the close of the month reached 11 per cent. Sometimes 13 per cent. is reached, while only a few years back not more than 8 per cent. could be procured. Better cultivation has increased the yield of sugar *one-half.* Lime manures appear to be of prime importance in producing this effect. Here is a relation between lime manures, and the abundance of sugar in vegetable juices, which is as yet unexplained by chemistry.

An experiment of Hermstadt, (Knapp's Chem. Techn., vol. 3, p. 82,) shows strongly how the relation between the saline matter and the food elements is marked in the wheat—that animal manures added increase the gluten, while the less stimulant the additions are, the more the starch and sugar preponderate.

Thus, wheat manured with—

1. *Vegetable Mould*, 10,000 parts yielded of starch, &c., 7,080 parts.
   Do. do. 10,000 parts yielded of gluten and albumen, 1,150 parts.

The increase of grain being five fold.

2. *Human Urine*, 10,000 parts yielded of starch, &c., 4,398 parts.
   Do. do. 10,000 pts. yielded of gluten and albu'n, 3,670 pts.

Increase of grain twelve fold.

3. *Unmanured*, 10,000 parts yielded of starch, &c., 7,146 parts.
   Do. 10,000 parts yielded of gluten and albumen, 1,108 pts.

Increase of grain three fold.

Here it appears that the vegetable mould nearly doubled the amount of the crop, while the ratio between the gluten and the starch elements were not affected. But that with an ammoniacal and phosphated manure the crop was not only increased four fold above the unmanured portion, but that the gluten was increased twenty-five per cent. in the grain, at the expense of the starch; or, taking the whole crop, the gluten was fourteen times greater in amount than on the unmanured portion.

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As the phosphates in this case entered into the wheat, it points out the mutual connexion between the presence of that salt and the formation of albuminous bodies in the plant.

To show that this connexion is closer than is imagined, I will notice Payen's experiments on the quantity of gluten present in the grain. This he found to vary from nine to twenty-two per cent. in different samples; and even in the same grain he found the proportion to vary as we pass from the outside of the grain towards the centre, the outer portions being richer in gluten, and the husk containing for the same weight a larger portion than the grain itself; hence the value of husks as a fermenting substance to brewers. Now, as the husk also is so rich in the phosphates, far exceeding the flour in that respect, we are again struck by the intimate relation which exists between gluten and phosphates. Nor is this connexion peculiar to the vegetable kingdom. In the animal we find the same concurrence of phosphates with the muscular tissue; the juice of flesh being rich in phosphates of potash, and in proportion to the amount of flesh, so is the abundance of alkaline phosphates. Now, as the animal albumen in muscle corresponds with the vegetable gluten, we find that if animals be deprived of soluble phosphates, that muscle ceases to be formed; and hence the mutual relation of phosphates and albuminous compounds, whether animal or vegetable, is made apparent.

Those relations which I have endeavored to point out in the case of the wheat and the beet root, might also be traced in other plants grown for food. But the manner in which chemical analysis is at present pursued and reported, does not serve to indicate this intimate connexion existing between a salt and a proximate principle. We require new analyses which shall point this out, made in connexion with the growing crop after the method of Hermstadt; and we require these analyses to be made in connexion with our own soils and plants.

Most of the analyses of soils found in books of reference are derived from Germany, and contain elements found only in a mineral country, as copper, lead, manganese, and even arsenic. The latter is remarkably proved in the noted Lafarge case, in which arsenic was shown to exist in the animal body, dependent on the food raised off certain localities. The analyses of plants grown in England are not much open to this objection, but the plants having been grown under different latitudes and different solar influences, do not represent in any truthful degree what the constituents of American crops

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are. Even in our own country, owing to its large territorial limits, the analysis of a corn crop raised at the north does not represent faithfully the constitution of a crop grown at the south. The gluten of both wheat and Indian corn is augmented the further south the crop is raised, and there is as much difference between the flour of Massachusetts and Alabama as between the wheat flour of Scotland and Egypt. This is attributed to climate, but what does climate effect? How is it that climate produces more gluten? Does it also increase the phosphates? Or, can the phosphates applied in liberal amount, replace the influence of climate? In other words, can the use of special manures in the northern States replace the latitudinal effects and solar influences of the south? Chemical analysis, as conducted at present, give us no data from which any conclusion on so important a subject could be drawn. The analyses of Saussure, Sprengel, and Davy have been performed at too early a period to place implicit confidence in them. The means of analysis at command then were not sufficient to obtain an accurate estimate of all the ingredients, especially those which exist in small amount in the soil. Indeed, it may be asserted that all analyses made previous to 1847 require to be repeated and revised, since it has been shown by Rose, Heints, and others, that the strong ignition of the ash altered and dissipated some of the contents. The majority of analyses found in our text books are derived, as stated, either from soils or plants of European countries, and as the ash bears a certain relation to the soil, that relation is lost for want of reference to the soils of this country. The knowledge of the constituents of the ash of a crop is but a portion of the knowledge derivable therefrom, when unaccompanied by the constitution of the soil.

The plan generally hitherto followed in setting down the analyses of the mineral matters of a soil leads to little, if any, practically useful result. It merely gives us the character and the per centage of the minerals. But the end and use of all these analyses is to know what relation each and all of their constituents have upon the total growth of the plants. To what elements is an abundance of Protein compounds due, and by what elements is the accumulation of starch, sugar, and similar proximate substances favored? We are not asking too much when we require this to be answered—the responses to some are already indicated by ordinary culture—but the solving of this important question is one which requires a set of experiments specially devoted to the purpose, and a careful

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collation of the analyses already made which have any bearing upon this point.

We want experiments which shall go to determine what are the mineral elements of a plant which are found in connexion with and which go to build up the various food and respiration elements in the plant. What salts assist in putting up gluten; what aid in sugar, starch, &c. Or, stating the question in general terms, what are the mutual relations between the organic and the inorganic parts of plants?

It is too much to ask the agriculturist in the field, or the chemist in the laboratory, to devote, unaided, both time and skill to elucidate this complex problem, involving a large number of experiments of growth and of chemical analysis. This would be the experiments suitable for a State agricultural farm and a State chemist. The function of the latter officer should not be confined to making analyses of soils or testing manures, to be conducted at cheaper rates than private men of science can perform such analyses for, and which only result in the benefit of a few individuals, and are of no benefit beyond that of the moment. But the business of a State chemist should be that of elucidating and philosophizing upon the various circumstances which combine to augment the growth and the produce of our food plants. The office of State or model farms should be, by well devised experiments upon the growth of plants, to raise agriculture from its present position of an *empirical art*, to the condition of a *science*.

Having distinctly enunciated the defect in the present application of chemistry to agriculture, the writer would submit it to the Society in the hope, that if meeting their approval, they would aid in obtaining such experiments and analyses performed, tending in the direction indicated, as would establish fully the relation which the varying constituents in the mineral matter of plants bear to the food elements in the same.

It is believed that a portion of the grant so generously bestowed by the federal government, for the benefit of agriculture, could not be better employed than by devoting some portion of it for this end: and this Society would greatly advance the cause of agriculture, by directing the attention of the proper authorities who dispense such grant to this matter; or otherwise, recommend that all endowed agricultural institutions be provided with an experimental farm and chemical laboratory, in order that the important questions of agriculture may approach a correct solution.

PRESIDENT WILDER'S VALEDICTORY ADDRESS.

Gentlemen: I thank you most sincerely for this renewed testimonial of esteem and affection, as expressed in the words of the resolutions that have just been adopted.

Endowed from my youth with a love of rural life and of rural taste, I have but obeyed the instincts of my nature in devoting such time, ability, and means as I could command to the cultivation of the earth.

In taking the incipient measures towards the formation of this Society, in all my efforts for its advancement, and in whatever I have been enabled to do for the promotion of the general cause, I have only been following the leadings of Providence and the inspirations of my own mind. [Applause.]

The duties of your presiding officer, I need not inform you, have frequently been perplexing and arduous, and their faithful discharge attended with difficulty and delicacy; but your kindness and co-operation has shared the burden with me, and I shall ever regard my connexion with you and the many friendships I have here formed as among the most delightful circumstances in my life.

On retiring from the position which I have so long occupied, I pray you, therefore, to accept the assurances of my high consideration and regard, and of my undiminished interest in each of you personally, and in the future prosperity of the United States Agricultural Society. Long may it live to be an honor and blessing to our country, and may its last days be its best days! [Applause.]

PRESIDENT TILGHMAN'S INAUGURAL ADDRESS.

Gentlemen of the United States Agricultural Society: In returning my acknowledgments for the distinguished honor of a unanimous election to the presidency of your Society, I feel deeply impressed by a sense of the importance and responsibility of the office, and of my own unfitness for the proper discharge of its duties.

You, fellow-members, will bear me witness that I would have preferred the selection of some one more worthy to succeed that gallant leader whose enlightened enterprise, whose untiring energy and open-handed liberality have contributed so largely to the origin

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and success of this Society. I am aware, however, that you desired to pay a compliment to the South, and to the State of Maryland in particular, and on their behalf I accept it as an evidence of the friendship and confidence which I hope may ever exist among the farmers, the planters, and the manufacturers of our beloved Union.

You have undertaken, gentlemen, to establish a Society which shall serve as a rallying point for the agricultural interest of the nation for all time to come, and which shall take rank throughout the world with the Royal Agricultural Society of England and the Imperial Agricultural Society of France; and proudly have you been seconded by the farmers throughout the country, and the agricultural and mechanical societies in the several States.

No narrow spirit of sectional jealousy exists amongst them; but animated by an impulse as noble as the calling in which they are engaged, they have vied with each other in their efforts to advance the common interest and in their offerings on the altar of our common country. We see collected here gentlemen from twenty-one States and two Territories, and from the District of Columbia, many of whom have attained an enviable distinction in the field, the forum, the workshop, and the laboratory. Discussions have been held, and papers read during the present meeting, not only by our own citizens, but by gentlemen from foreign countries, evincing a degree of research and information which would reflect credit upon any association. Surely, then, we have an institution of the highest interest, and one that is deserving of our greatest care.

Already has it acquired a "*name*," but its "*local habitation*" is not yet sufficiently provided for. It is time that it should be placed on a footing of still greater permanence; that it should be known as one of the established institutions at the capital of the nation; and I hope the present meeting will not be suffered to terminate until arrangements have been made for opening a permanent and suitable office at Washington, under the immediate charge of our able Secretary, by which a connexion may be established with the numerous agricultural societies throughout the country, and also with those of Europe; from which shall emanate a monthly journal of proceedings and other valuable information, to greet you at your firesides and cheer you in your labors with an annual volume of transactions, which shall be regarded as the highest authority upon agriculture, and where all those connected with agriculture, who visit this city, may meet as brothers at a common home, and find a collection of objects in which they have a mutual interest.

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The success of many of the State societies, and the extensive benefits they have conferred, have vindicated the wisdom of those States which have made appropriations for the development of their agricultural resources, through the agency of the societies established within their bounds.

Why should not Congress imitate so excellent an example?

The powers of the general government within the District of Columbia are surely as great as those which the States possess within their respective limits.

Let us, then, apply without a moment's delay for an endowment in money sufficient for the purchase of an experimental farm within the District of Columbia, where every species of culture, all the products of the soil, and the various breeds of domestic animals may be seen by every one who visits the metropolis of the nation.

This would serve for an excellent beginning, and might afterwards, with the aid of the bill now before Congress for a donation of public lands, be elaborated into an institution for instruction in the science, as well as the practice, of agriculture. I have too much confidence in the liberality and discrimination of our representatives in Congress to doubt that, in view of the large individual expenses incurred by the members of the Society, they will at least appropriate a sum sufficient for the necessary liabilities of our association.

There are many other important topics to which I should be happy to allude; but I have already exceeded the limits which are appropriate to such an occasion.

Permit me, in conclusion, to invoke the blessings of that Power on whom alone we rely for the assurance that "seed time and harvest shall not fail;" and to solicit for those to whom you have deputed the charge of the Society for the ensuing year your constant and hearty co-operation. [Applause.]

LETTERS FROM THE LATE VICE PRESIDENT CUSTIS.

COMMUNICATED BY GEN. ANTHONY KIMMEL.

On the second day of the meeting, Gen. Anthony Kimmel, (Vice President from Maryland,) asked permission to address the Society upon a subject already brought to its notice, when he was not present, and on which he wished to make a few brief remarks. He alluded to the announcement of the death of George Washington

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Parke Custis, Vice President from Virginia of the United States Agricultural Society, and one of its most useful members—the adopted child of Washington—the "Farmer of Arlington." Mr. Custis was always present at our councils, and we always listened to him with delight, for he told us of the "Farmer of Arlington," and of his own agricultural experience, the success of which gave conviction to his opinion and authority to his example. While loving his native State, that "mother of Presidents and Patriots," he loved also our glorious Union, and everywhere proved himself the true American citizen. At home, he was loved and honored, and to us, his associates in this Society, his death is a source of unfeigned sorrow.

I wish, Mr. President, (said Gen. Kimmel in conclusion,) to present to this Society two letters from Mr. Custis, which I trust will be read and carefully preserved in its archives. They show his intention to have visited the last exhibition of the Society, at Louisville, and bear witness to his desire to do all in his power to contribute to its prosperity:

[On motion the letters were read, and ordered to be published:]

ARLINGTON HOUSE, 13th August, 1857.

My Dear General Kimmel: Your very acceptable letter came duly to hand. I had previously received a most kind invitation from a committee of the citizens of Louisville to attend the grand celebration of the 1st of September, and also a letter from our worthy Col. Wilder. pressing my going on to the same. I must reply to you, my dear sir, as I have done to them, viz: That if the decaying energies of an old man in his 77th year can bear him up to the effort, then I shall hope to have the honor of taking you by the hand at Louisville on the 1st of September. Many and most sincere thanks to you, my dear sir, for your kind offer of aiding and caring for me on the long journey to the West. From past experience at Philadelphia, I am aware of the value of your guardianship and care of a feeble old man, and I should, assuredly, if I attempt the journey, be most happy to place myself under your protection.

In regard to Washington, Marshal of France, I have in this hour proof, strong as holy writ, in an engraving of Nepur, of Merchistoan, the celebrated inventor of Logarithms, which was presented to Washington by the Earl of Buchan, a relative of the philosopher, with his endorsement, in the handwriting of the Earl—"To Marshal General Washington, with the respects of Buchan." Now, Buchan lived in the age of our Revolution, and was an associate of courts, and certainly would not have addressed to one whom he loved and admired as he did the Chief by a title to which he had no claim.

Lord Napier, on a visit to Arlington House, was very greatly gratified by the sight of a reminiscence of his ancestor treasured away among the relics of Washington.

The history of the American, a Marshal of France, is simply this: when, in 1781, Colonel Lawrence went to France as special ambassador, a difficulty arose between him and the French ministry as to the command of the combined armies in America. Our heroic L. said: "Our chief must command it in our cause, as the battle is on our soil." "*C'est impossible,*" exclaimed the Frenchman; "by the etiquette of the French service, the Count de Rochambeau, being an old Lieutenant General, can only be commanded by the King in person, or a Marshal de France." "Then," exclaimed our dear glorious Lawrence, "make our Washington a Marshal de France, and the difficulty is at an end." 'Twas done. A friend of mine heard Washington spoken of as a Monsieur le Marshal at the seige of Yorktown. Our beloved Washington never coveted or desired rank or title; but it is beyond a doubt that, from the force of circumstances just related, the rank and title of Marshal de France was conferred upon the General-in-chief of the combined armies of America and France.

Should I find that I have courage as well as strength to undertake the journey to the West, I will give you due notice.

Believe me, my dear sir, truly and faithfully, your obliged friend and servant,

GEORGE W. P. CUSTIS.

Gen. KIMMEL.

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ARLINGTON HOUSE, 4th September.

My Dear Gen. Kimmel: It was a great disappointment to me not to be able to accompany you to Louisville, but you will recollect that in my letter to you I mentioned that it would depend upon my courage and strength. Courage was not wanting, but strength was. I have been much out of health for more than a month past, and fearing I might break down on a long journey, (for a man of 79 years,) and become an inconvenience to my friends, (yourself in particular,) I gave up the matter.

I sincerely hope you have had a great time of it, and in the hope that we shall meet at the annual meeting of the Society in Washington, with cordial good wishes for your health and happiness, believe me, sir, ever faithfully, yours,

GEORGE W. P. CUSTIS.

Gen. KIMMEL.

REPORT ON "HOG CHOLERA."

The committee appointed to report on the epizootic which has and is now prevailing among *swine*, in various parts of the United States, have not been able to obtain the necessary data for a full and correct report, and therefore we respectfully submit the following:

It appears to us that the disease is not of that specific character known as cholera; we, however, have had no opportunities for making post mortem examinations, yet relying on documentary evidence and facts which have come under our personal observation, it appears that the disease bears more analogy to that epidemic known as "*pleuro-pneumonia*," than it does to cholera. *Cholera* is a disease accompanied by definite symptoms, which very rarely vary in different patients, except in *intensity*. The disease is almost always accompanied by vomiting and purging, derangement of the liver, gripings, and spasms of the abdominal muscles; and on dissection, certain pathological conditions are revealed, which are not observed in any other disease than true cholera; and, lastly, it has been discovered that when the desections of cholera patients are examined under the microscope, a certain peculiarity well known to medical men is invariably present. We desire, therefore, to reiterate our belief, that though not able to produce actual proof, the evidence which has reached us through the medium of the press, and on the strength of what we ourselves have heard and seen, goes to show that the disease which has lately made such sad havoc among swine, is not *cholera*.

Then the question arises: What is the nature of this epizootic?

In a number of cases it appears to bear some resemblance to *epizootic pleuro-pneumonia*, a disease which of late years has prevailed as a devastating scourge in all the States of Europe, although it has scarcely attacked any "*porker*," showing a decided perfer-

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ence for the *bovine* species. We understand that *pleuro-pneumonia* is a disease located in that highly organized structure—the lungs. It is usually ushered in by cough, accelerated respiration, and marked inflammatory or febrile symptoms.

Autopsies show conclusively that the air cells, the substance of the lungs, and their investing membranes are the parts principally affected; and we now refer to a few particular instances of a striking kind, in view of showing the analogy existing between the epizootic, known as pleuro-pneumonia, and that which has erroneously been termed "*hog cholera.*" The most reliable and conclusive testimony in favor of the *pneumonic* origin of the disease, is furnished by Dr. J. Higgins, of Maryland. He states that he obtained specimens of the blood of healthy and dying animals, (swine,) for the purpose of comparison, and found, on careful examination, that the blood of the diseased hog was in a high inflammatory condition. Having discovered this fact, his next object was to determine the *location* of the disease; and we now introduce, for the consideration of the members of this Society, an extract from a report furnished by Dr. Higgins:—

"The condition of the blood evinced a high degree of inflammatory action, but did not show in what particular organ or organs, structure or structures, the inflammation was located. To discover this, I made numerous post mortem examinations, and found, 1st, the brain healthy; the heart, do.; the stomach, do.; bowels, including the greater and lesser intestines, do.; kidneys, do.; liver, do.; melt or spleen, do.; lungs, intensely diseased; in the upper portion they were engorged with dark, grumous, bruised-looking blood, and in the lower lobes the inflammation had proceeded to suffocation, being filled with purulent, bloody matter, and entirely incapable of carrying on the process of breathing. The left lung was generally more affected than the right, and in every instance the inflammation had proceeded to a greater extent in the lower than in the upper part of the lungs—in some cases the peculiar structure of the lungs could not be seen, so entirely had it become disorganized. In no cases were well defined abscesses found, nor was the windpipe inflamed but a short distance from the seat of the diseased lung."

From another source entitled to our consideration, the following paragraph is offered as documentary evidence of our theory of the pulmonic origin of "*hog cholera:*"

"A new supply of some fifteen hundred hogs were put into the inclosure ready to supply the pens, at the still-house in this place last week, and were soon attacked with what was supposed to be the disease called 'hog cholera,' since which time they have been dying at the rate of fifty or sixty per day. The first symptom noticeable is a slight cough, which is soon followed by a drooping stiff appearance; the nose and lips, and sometimes the jaws and ears, turn blue, and swell up, and finally purging, and sometimes vomiting follows, and death ensues speedily. Hogs, in every stage of the disease, have been killed and examined for the purpose of ascertaining the nature of the disease, and the result establishes the fact beyond scruple, that the disease here is inflammation of the lungs, those in the first stages showing a congested condition in a portion of the lungs, while those further advanced had a more extensive engorgement; and in the last stages of the disease the lungs were dark, dry, and solid, with some ulceration of the lungs and throat. The stomach and intestines show no signs of disease."

Other testimony, however, has been furnished your committee, which somewhat invalidates that just offered, tending to show that the so-called hog cholera is identical with that malady known in Europe as contagious typhus; therefore, the true nature of the dis-

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ease at the present time is problematical, and it remains for some future investigator to discover and make known the true nature of the affection, and the laws which govern its extension.

As regards the *cause* of this epizootic, your committee are of opinion that the various theories which have hitherto been advanced are all gratuitous: for example, it has been asserted that animals fed on swill at the distilleries, where *strychnine* is supposed to be used in the manufacture of whiskey, are the subjects among whom this disease has been most prevalent; yet it is a significant fact, that many of our farmers in the *northern* States have lost, during the prevalence of this epizootic, a large number of animals, into the composition of whose food the above poison could not possibly enter. In fact, we have no proof that the distillers ever use strychnine. Equally absurd are various other popular theories, and it is needless to attempt an exposure of their fallacies.

The direct cause of this epizootic, like that of cholera, murrain, influenza, potato rot, &c., are unknown. They are generally independent of local causes, and there is no uniform relation between an epizootic malady and the state of the weather, as some persons have asserted; they occur at uncertain intervals, prevail for indefinite periods, and attack animals in different regions, dissimilar in climate, and without regard to the season of the year. It may, however, be proper to remark, that all infectious diseases must have originated spontaneously, for there certainly was a period when they did not exist. Hence, the swine epizootic may therefore be presumed to have had a spontaneous local origin in the Western or Southern States, commencing as an *enzootic*, and terminating as an *epizootic*, (the first term refers to the *place* of the disease, the latter to its *extent*,) and this appears to be the case from the fact that most of the animals attacked with this disease in Massachusetts, were procured from western drovers.

As regards the *indirect* causes of epizootic maladies, hog cholera included, both *debility* and *plethora* favor their development, and herein is our safeguard. We must endeavor to prevent *debility* by furnishing the animal with the necessary nutritive equivalants, in the form of food, and guard against plethora by feeding less liberally. Your committee beg to be excused from offering any remarks on the treatment of this epizootic, for until its true character be determined it cannot be treated understandingly.

Respectfully submitted, CHAS. L. FLINT,
G. H. DADD, *V. S.*

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SIXTH ANNUAL EXHIBITION

OF THE

UNITED STATES AGRICULTURAL SOCIETY.

The Sixth Annual Exhibition of the United States Agricultural Society was held at Richmond, Virginia, on Tuesday, Wednesday, Thursday, Friday, and Saturday, the 26th, 27th, 28th, 29th, and 30th days of October. The Virginia Central Agricultural Society guaranteed the payment of premiums and expenses to the amount of twelve thousand dollars, and its officers superintended the local arrangements, which were upon the most liberal scale. The Premium List, the Regulations, and the names of the officers of the Exhibition, will be found in the "*Monthly Bulletins*" for July, August, September, and October, and in the November number is a List of the Premiums awarded.

THE EXHIBITION GROUNDS.

The grounds are admirably situated, at one extremity of the principal street of the city, and near a temporary stopping-place on the Fredericksburg railroad. They were originally fitted up for the Virginia State Agricultural Society, and they were described by the experienced correspondent of the *Country Gentleman* as "too small for the present exhibition, yet the best arranged I have ever seen." An ornamental gateway, over which floated the flags of the United States and of Virginia, opened into an enclosure containing eleven acres, bordered with permanent sheds for cattle, sheep, and swine. These sheds were wide enough for a covered walk before the stalls and pens, and they kept the animals and their visitors protected from the storm, which raged during the two last days of the Fair. In the centre of each side was a second-story forage loft, well supplied with hay, fodder, and grain. Large placards showed the location of each distinct breed, and there was an abundant

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supply of water in different localities. Within these sheds there was a wide gravel walk around the grounds, and other walks intersected the level green sward, which was tastefully laid out with clumps of trees and of shrubbery. In the centre was a large tent, fitted up like an amphitheatre with rows of seats, and a rostrum for speakers. Grouped around were four halls and four large tents for the horticultural, pomological, farm product, vegetable, domestic, mechanical, implement, and fine art departments. A long row of permanent coops was provided for the poultry. There were sheds for the locomotive engines, and the heavier implements were arranged in classes upon the grass plats. A permanent building, which met the eye of visitors immediately on entering the grounds, was the "headquarters" of the President, and near it was the marquee of the efficient Chief Marshal, with tents for the Press, the Secretary, the Chief of Police, and six others for the use of committees. Connected with the main show-ground was the horse lot, which contained about five acres, and within which was a track of a quarter of a mile in extent. Three sides of this were bordered with permanent sheds containing stalls, and on the other side (that next the main grounds) were ten tiers of elevated seats for ladies. In the centre of these seats was an raised pavilion for invited guests, commanding a view of the whole scene. A fine display of the flags of different nations decked the grounds, and the band of the State Public Guard furnished excellent music.

The superintendence of the grounds was entrusted to Col. Charles Dimmock, whose admirable arrangements were carried out with exactness and punctuality. "He will long be remembered, (wrote an invited guest,) by those in attendance, for his kind and courteous demeanor, and prompt and ready answer to every demand made upon him." The most perfect order was maintained, and no accident occurred to mar the harmony of this "encampment of a great agricultural army," engaged in the conquest of the soil, and in the subjugation of creation to the will of man.

FIRST DAY.—*Tuesday, October* 26.

Every preparation had been completed on Monday, and at nine o'clock on Tuesday morning the flags were simultaneously hoisted, while the band played "Hail Columbia." The weather was fine—the sun shone pleasantly—the air was cool and bracing—and every

thing about the grounds looked attractive and interesting. The white tents and waving flags, the handsome arrangement of the exhibition, the busy throng, all combined to invest the scene with a picturesque beauty.

President Tilghman, having been attended from the city by the other officers of the Society, appointed Col. Allston of S. C.; Capt. Horncastle of Md.; and J. Pegram, Esq., of Va., a committee to wait upon Ex-President Tyler, and escort him to the grounds. A similar committee was appointed to wait on the Governor of Virginia, viz: Capt. Conti of Md.; H. Clay Burgin, Esq., of N. C.; and C. S. Wainwright, Esq., of N. Y.

When these distinguished guests had arrived at the President's headquarters, and had been introduced to the officers and members of the Society, and to the numerous delegates present from different State and county agricultural associations,* a procession was formed, and these gentlemen proceeded to the large tent. This had for sometime previous been crowded by a brilliant assemblage, the ladies filling the circle of raised seats.

After the performance of a national air by the band, James Lyons, Esq., President of the Virginia Central Agricultural Society, called the assemblage to order, and—at his request—the Rev. Dr. Hoge, of Richmond, invoked the blessing of Divine Providence.

Mr. Lyons then briefly yet eloquently welcomed invited guests to the State of Virginia, and introduced General Tench Tilghman, President of the United States Agricultural Society, who was received with applause, as he came forward to address the assemblage:

INAUGURAL ADDRESS OF PRESIDENT TILGHMAN.

Brother Farmers of America, Ladies and Gentlemen of whatever clime and occupation: You have listened to the language of eloquence and cordial hospitality with which we have been welcomed to the Capital of this ancient Commonwealth, by the distinguished President of the Virginia Central Agricultural Society.

It becomes my pleasing duty to acknowledge the obligation which has thus been conferred upon us, and as the official organ of the Agricultural Society of the United States to extend to all who are here assembled a greeting to this, its sixth annual festival.

Gentlemen of the two societies: Allow me to congratulate you, and those who are our especial guests on this interesting occasion,

*A partial List of these Delegates will be found appended to this report, and it is to be regretted that some who were present failed to register their names or to present their credentials.

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upon the success with which your efforts have been crowned, in the magnificent spectacle by which we are now surrounded.

From the granite hills of New Hampshire to the verdant rice-fields of Carolina; from the swarming cities on our Atlantic border to the fertile valley of the Mississippi, Ceres and Pomona have vied with each other in contributions from the richness of their stores; and in the varied products of the farm and the garden, the mine and the ocean depths, the workshop and the laboratory, which are here collected together, we behold an epitome of our country's greatness, and an evidence of its enduring prosperity.

A still more pregnant indication of the importance attached to the calling in which we are engaged, is to be found in the magnitude and character of the vast concourse which has assembled to witness our exhibition, and in the number and distinction of the representatives from other States who have come to participate in our proceedings. The sturdy yeoman has left his fields and his herds; the mechanic has deserted his workshop; the learned professions have contributed from their members those who have earned the highest distinction in the varied walks of science and of literature; the highest dignitaries both in church and State are here, to honor us with their presence; and beauty has sent a chaplet of her choicest flowers, whose richness forms the crowning glory of the scenes, and holds the admiring spectator entranced and spell-bound in mute admiration of its loveliness.

Among the many remarkable developments by which the growth of our country has been attended, few have afforded greater cause for surprise and gratification than the rise and progress of the United States Agricultural Society.

Its great prototype, the Royal Agricultural Society of England, had been in successful operation for many years, sustained by all the wealth and enterprise of that powerful and enlightened nation, before it ventured upon the experiment of migration in its fairs, which has since been found to be so highly beneficial in its results. Even there it is still regarded as an undertaking of no ordinary magnitude; and yet the actual extent of their migrations is less than those of the State Agricultural Society of New York; whilst the smallest distance between the locations of any two consecutive fairs of the United States Agricultural Society has been greater than the entire extent of the United Kingdom of Great Britain.

It is an interesting incident in the history of these two greatest agricultural nations of the world, that the present mode of conduct-

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ing their national fairs was commenced almost at the same period, and has been attended with results which evince a remarkable degree of coincidence.

Their exhibition for the present season was held in the ancient city of Chester, and many of the most distinguished of the nobility and gentry attended their meetings, and participated in their proceedings. Among those whose eloquence contributed most largely to the interest of this memorable occasion, was the Right Hon. W. E. Gladstone, M. P., now one of England's greatest commoners and purest statesmen; and I was forcibly struck with his impressions of the effect of such gatherings in England and their applicability to our own Society:

"I think it may be truly observed, (said Mr. Gladstone,) that this—I must say distinguished—I may say illustrious Society—appears to me to supply a want which is the greatest inherent want of agriculture. If we look to the case of manufactures, it is their nature to collect themselves in enormous masses around great centres of industry. If we look to commerce, incessant communication between every part of the commercial system of the country is the very vital air it breathes, and is naturally inseparable from commercial development. But with agriculture the case is different; for, on the contrary, its nature is to be gathered around local centres, which, under ordinary circumstances, have little or no connexion or communication with one another. It is, in comparison, an isolated art, and, therefore, it might follow, under general circumstances, that agriculture was languishing in various quarters of the country, simply from the want of a knowledge of the progress achieved in other portions of the land. Well, now, if I am right in saying that this is the besetting danger and difficulty of agriculture, is it not true and obvious that the Society whose festival we commemorate to-day, is, by the very principle of its construction, adapted effectually to supply that want, for its business is to bring together the men and the minds of all portions of the country? The stock of Devonshire, the horses of Suffolk, the various products of England, are exhibited in the yards to-day. The agriculture of England, through the means, mainly, of this Society, is rapidly attaining to the position to have but one heart and one mind—one common pulse that causes the circulation of the vital fluid throughout the whole system—one common stock into which everything that skill, that industry, that intelligence, that capital had achieved in every single part of the country, is made the common property of every other portion of the country."

These, gentlemen, are some of the considerations on which we invite your assistance and co-operation. The great principle which has achieved such wonderful results in our own country, is that of ASSOCIATED ENTERPRISE; and yet how little has been done by the farmer to avail himself of its benefits. How few of those who see the fruits of their honest labors wrenched from their grasp by the iron clutch of the remorseless speculator, or rendered valueless by the over-production of some of their most important staples, ever reflect that there are now in existence in the United States nearly eight hundred agricultural societies; and that by the contribution of a single dollar from each one of their members, a fund might be raised sufficient to secure on a permanent foundation the organization which the United States Society have already successfully established. One of the most important features of this organization, is the *Monthly Bulletin*, which has been issued since the month of February last, from the office of the society in the city of Washing-

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ton; and which, together with the annual volume of its transactions, is furnished gratuitously to those who become life members by the trifling contribution of ten dollars to its treasury.

Unpretending in its appearance, and avoiding all intrusion upon the legitimate sphere of the various agricultural journals which are laboring so successfully in different parts of our country, the *Monthly Bulletin* presents a claim upon the confidence of the farmer, to which no one of these journals possesses in the same degree. It has no other possible interest to subserve than that of the farmer, whose journal it is—not even that of its editor, who is the permanent Secretary of the Society. It relies solely upon the gratuitous contributions of the farmer for its support, and were those contributions ever so generous, they would be devoted entirely to the benefit of the whole farming interest of the country.

How easy then would it be for the farmers of the nation to establish an almost telegraphic intercourse between every section of our extensive country, by a simple system of monthly reports from all the agricultural societies, and prominent farmers, to the Secretary of the United States Society at Washington. The information thus obtained from each, would be combined and transmitted to all. The opportunity for speculation would be greatly diminished. Humbugs that are often so rife throughout the country, and of which the farmer appears to be the favored victim, would be fearlessly exposed, and in a short time a fund of statistics would be obtained, from the collation of which important results might be adduced.

The benefits derived from such a commencement, would increase the desire for their extension; until at no distant day the Society might hope to obtain, by endowments and other contributions, the means of establishing a Quarterly Journal of Agriculture, in whose columns those most deeply versed in the arcana of nature might discuss the abstruse principles upon which the most important results are often found to depend, and yet which do not possess a sufficient attraction for the superficial reader, to obtain for such a journal a support sufficient to secure its existence by subscription alone.

It is not a little surprising, that the portion of our country in which the agricultural interest is most important, should have been the last to lend its co-operation towards the advancement of this Society.

We are now assembled, for the first time, upon Southern soil, and I hail it as a good omen that the Old Dominion, the mother of States, and whose fair daughters have been the nursing mothers of

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Presidents, should have been the first to welcome the United States Agricultural Society to her territory and her Capital. The atmosphere by which we are now surrounded is redolent with the memories of those illustrious statesmen and great farmers, who constituted the Cincinnati of our youthful republic; and it is impossible to look upon yonder noble river, whose banks are now teeming with the fruits of commerce and agriculture, without remembering that here lived the graceful Pocahontas, and here too were the cornfields of Powhatan and Opechancanough, which preserved the lives of our famishing progenitors in the infant colony of Jamestown.

The route by which many of us reached this hospitable city, conducts the traveler to that shrine which has become the Mecca of the patriots of all lands. As I passed, in the solemn stillness of the night, the spot where rest the ashes of the Father of his Country, I felt an influence pervading the scene, as if his spirit was still lingering in the quiet shades of Mount Vernon, and as if the vocations which absorbed so much of his thoughts and attention whilst on earth were still regarded as not unworthy of his remembrance. "Go, tell your brethren," (he seemed to say,) "that they are engaged in a noble and a holy cause; tell them to persevere in an effort which only requires perseverance to achieve success, and which, if successful, must have a powerful influence in cementing those institutions to whose foundation my life was so largely devoted."

Gentlemen, this is the spirit which should actuate every American farmer and every patriot in the land, whatever be his calling or profession. Let me urge you, then, to come up to the good work without delay. Let it be one of the proudest boasts of every American citizen that he is also a member of the National Agricultural Society.

Gentlemen, it only remains for me to announce to you that the Sixth National Exhibition of Agriculture has been now formally opened.

REMARKS OF GOVERNOR WISE.

At the close of President Tilghman's address, loud cries went forth from every quarter of the spacious tent for Governor Wise. The Governor refused to respond for a time, but ultimately gave way, the calls being vociferously kept up. He advanced to the front of the platform and was hailed with thunders of applause. When order was restored, he said: Fellow-citizens, I thank you very cordi-

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ally for this compliment, and I regret most deeply that I shall be obliged to disappoint you. (Cries of "Go on, go on.") I am very sure that you will not call upon me to go on when you reflect upon my situation. I am here, a committeeman, waiting upon invited guests—a member of the committee of invitation, who has other duties to perform than prepare an address. But I would not decline on account of a want of preparation. This scene, this occasion, is sufficient to inspire any man with a heart to say something; but to tell you the truth, I am at this moment unsuited for any physical exertion. The very organ which is most required in speaking is out of order. (Laughter.) I am suffering this moment from an abcess from a very painful tooth, and it is impossible for me, as you can see from the swelling of the bone—for I believe that the very bone is swelling—(laughter)—to utter what I would utter to you if I could. It has often been said for the exhibitions made by the Agricultural Society of Virginia, that if she had not the implements of husbandry to exhibit—if her race of blooded stock is dying out—if she is turning the courser into the plough horse—if she has not progressed in the mechanic arts—that at all events she has still left to her a people; and go where you will, come whence you may, Virginia has her sons and her daughters to exhibit; and here they are. (Applause.) And I would, for one, most cordially contribute to their pleasure and their gratification, and honor our honored guests by every means in my power. I merely rise now to make an apology for not making a greater effort at this time. I will wait for a little ease.

REMARKS OF EX-PRESIDENT TYLER.

Ex-President Tyler, being next called upon, came forward and said: Fellow-citizens, after the eloquent address you have just listened to, what can you expect of a plain old farmer like myself—an old ploughman, who is seeking respite from the toils and labors of his plantation. Gentlemen, you make a requisition on me which, if I had, under ordinary circumstances, the strength of Hercules, I could not comply with. After the exhibition you will have had all you desire in the way of addresses. You have here around you an association of which our people may be proud; you are called upon as Virginians to receive with that cordiality and hospitality, and that kindness of greeting which always characterize you, strangers from abroad, and to hail that flag as the emblem of an agricultural society, which now floats over you—the flag of the Union, the flag

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of your country. (Applause.) This is your task to-day; and yet you make this requisition upon me under circumstances which—as the Governor has answered according to his conviction of his own inability—apply to me with tenfold force. You will, therefore, excuse me from saying more than offering you my greetings on this occasion. I congratulate you on the evidences of advancement in agriculture and the mechanic arts, and in all that pertains to social and private life, which I see here exhibited. I tender you my benefaction, and with that my retiring bow.

THE SCENE ON THE GROUNDS.

Hon. Wm. C. Rives and other gentlemen were called for, but they declined speaking, and the assembly dispersed to witness the varied objects of interest. "The crowd compared, in point of numbers, (said the *Richmond Dispatch* of the next morning,) with the previous annual gatherings in Richmond. The ladies, as usual on such occasions, were present in magnificent array, and we never saw an assemblage that afforded more attractions in this respect. Many citizens of other States were in attendance, and the distant counties of our own contributed their best population to augment the throng. Throughout the spacious grounds—in the pavilions, amongst the machinery and implements, around the stock pens and the trotting track, in the ladies' department—in every direction, the eye rested upon a moving multitude."

Each and every animal and article exhibited had been submitted by the exhibitor thereof to the *test of an entry-fee*, and was thought worthy of entering into competition for the premiums. By this arrangement, the large quantity of inferior stock, implements, vegetable products, &c., with which exhibition grounds are often crowded, concealing more valuable entries from view, were excluded. Hon. B. P. Johnson, the experienced Secretary of the New York State Agricultural Society, who has witnessed the prominent exhibitions of this and other countries, thus summed up what he saw at Richmond, in the December number of the "*Journal of the New York State Agricultural Society:*"

"The entries made on Monday and Tuesday were quite as large as could have been expected. The show of cattle was an excellent one. The leading breeds of cattle were all represented more or less extensively—and some of the stock in the Short Horn and Devon classes would challenge competition. Five Herefords from Ohio were of first quality, and two from Maryland were good. The fat cattle show was superb, and there is rarely seen such a selection of well fattened animals. These were fattened in Virginia, or the most

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of them, and speak well of their mountain pastures, which I am told are equal to the best Kentucky blue grass pastures.

"The show of Long-Wooled sheep was very superior. The flock of Col. Ware, of Virginia, cannot be excelled any where. He breeds from none but the first prize animals from England, and his sheep are equal, if not superior, in many instances, to the imported ones. A splendid show of Silesian merinoes attracted, as they deserved, great attention. South Downs, French and Spanish merinoes, were shown of good quality. The sheep department was a success.

"The swine were generally good—the Chester county being the favorite of the large breed, and the Suffolks of the small breed.

"The poultry was very fair—many very fine birds, and of most of the approved varieties. The monstrosities were not there. Taking the stock together, I was told by gentlemen of Virginia, that it was probably superior to any had there at State exhibitions.

"The show of horses was exceedingly fine, especially in the thorough bred classes. "Red Eye," "Revenue," "Fly by Night," "Rescue," &c., and their progeny, comprised a better show of blood horses than I have ever seen.

"Implements and machinery was also very fair, and several of our northern firms had some of their choice implements, and secured the awards against all competition.

"In the domestic, miscellaneous, fruit, floral, and grain and vegetable departments, the exhibition not large, but respectable as to quality."

SECOND DAY.—*Wednesday, October* 27.

The crowd of visitors on the second day of the exhibition was even larger than it was on Tuesday. The sky was clear, the air was soft and bland, the sun lent its full autumnal brilliancy to the scene, and every thing contributed to the general enjoyment of the occasion. The officers of the Society were on the ground at eight o'clock, and at a quarter before ten the judges of classes 1, 3, 5, 7, 9, 11, 16, 18, and 20, [see *Monthly Bulletin* for July,] met at the headquarters of the President, to receive from him their instructions, and books in which the entries in their respective classes were registered. They were requested to return these books, with their awards written in them, thus obviating all future misunderstanding.

Notice was given that the Executive Committee [Secretary Poore voting in the negative] had resolved to repeal the published regulation, that "when there is but one exhibitor, although he may show several animals in the same class and order, only one premium will be awarded; that to be first or otherwise, as the merits of the animals may be adjudged."

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EXHIBITION OF THOROUGH-BRED BULLS.

At ten o'clock the various classes of bulls were led in procession into the "ring," or the enclosure within the "track," and there grouped for the decisions of the different boards of judges. After examination, the successful animals were at once designated. Those to which the first premiums were awarded, had *blue ribands* attached to their horns; those to which the second premiums were awarded, *red ribands;* those to which the third premiums were awarded, *white ribands;* and those thought by the judges worthy of commendation, *green ribands.*

THE WELCOMING CEREMONIES.

At twelve o'clock a procession was formed at the President's headquarters, of the officers and members of the two Societies, the invited guests, the delegates, and the members of the press. After they had entered the large tent and taken seats on the platform, President TILGHMAN invited attention to—

MR. MACFARLAND'S ADDRESS OF WELCOME.

Visitors of the National and Central Fair: I have a message to deliver to you—a message of courtesy and compliment—which does honor to those who have delegated me to deliver it, since it expresses their disposition to do deserved honor to you. It is a message that has already reached you, in a form more expressive and emphatic than is in the power of a formal announcement to convey. It is, my friends, to assure you, in the name of the Central Society, of the satisfaction and pleasure which your presence has diffused, and that you are cordially and sincerely welcomed to the city and to these grounds. This you have beheld in the friendly manifestations which have greeted you on every side—of which it is intended there shall be no abatement, nor the omission of any thing which can entice you to feel at home, surrounded by familiar brethren and friends.

The friends from other States, who favor us with their presence, is a particularly gratifying feature of this imposing occasion. To you, also, is extended a sincere and cordial welcome. From whatever distance you have travelled, and whatever peculiarities and diversities you may note, in comparing the scenes you left behind with those you have beheld, you are not strangers, but brethren, united to the people in whose midst you are, by indissoluble sympathies and duties.

Our social, as our civil life, bears the strong impress of the benign power of our constitutional Union. Through its beneficent agency

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our hopes, our cares, the apprehensions we would dismiss, and the aspirations we cherish, work together to mould and fashion us into a great, indivisible brotherhood. Our national fair is the growth and offshot of our Federal Union, and has for its aim the same end—the discouragement of the insidious and jealous suggestions of unchastened local and sectional attachments, and the diffusion of a generous and fraternal concern, in every section, for the welfare and success of the whole. Let us hope that the national fair, at every succeeding recurrence will, as now, be signalized by the courteous and confiding intercourse it will elicit, the concord and harmony it will bespeak, the growth and progress which it will display; and that on their return home, one and all will have had their convictions of the necessity of the Union deepened and confirmed, nor be content until their own vivid perceptions of its excellence are partaken by their neighbors and friends.

Farmers are social, communicative, ever ready to spread and distribute their knowledge of new and better modes of working out their results. A certain lord, of English notoriety, as Clarendon informs us, refused to go to court, because he might find there a greater than himself; our farmers attend our fairs because they expect to meet with better farmers than themselves. Farmers are exempt from the contentions and jealousies of other professions. Against the sordid temptation to monopolize and engross the use of valuable discoveries and inventions, they are secure, from the fact that their plans and operations are subject to common observation, and to imitation of course; and for the better reason, that a grudging, monopolyzing spirit is at enmity with the sentiment of universal good will to which the beneficence of the genial seasons is forever training them. It is their privilege to exult in the adornment of the earth, and in making it fruitful; not the acres only, whereon they separately labor, but the whole earth—and to rejoice in every progressive agricultural achievement, wherever its theatre, as another proof of the dignity of their vocation, and of its exhaustless resources. The fairs, associations, the assembling periodically of farmers, have their foundation in the unity of sentiment and interest which pervades the agricultural world; and whoever imparts to them a new impulse, by the attractive fruits of his tillage, or the animals which attest his affectionate training—by inventions which accelerate labor, or fabrics which display the author's handiwork—is a benefactor, whose worthiness bears Heaven's attestation.

For the brilliant success of this recurrence of the national fair,

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for the extent and richness of the exhibition, and the vast and imposing crowd assembled, whereof the number of our fellow-citizens, from so many of our sister States, is engaging, felicitous, characteristic, our thanks are due, and especially to the distinguished President of the National Society, and to all who have co-operated with him. To all who have contributed to the occasion, and sympathise in its innocent excitement, we tender our heartfelt congratulations.

Again, we tender to all present a sincere, cordial Virginia welcome.

MR. CUSHING'S REPLY IN BEHALF OF THE INVITED GUESTS.

Mr. President of the United States Agricultural Society, and you, sir, the President of the Virginia Central Society, and you, sir, the honorable, worthy, and eloquent organ of the Virginia Society, who have on this occasion welcomed the guests present, permit me, in their behalf, in behalf of them and myself, the favored guests here present, to tender a brief word of response to the generous and hearty welcome which you have afforded to us for the people of Virginia.

We appreciate, ladies and gentleman, what there is of noble and of generous in the thought that this is a national occasion; that it is a national occasion which has its celebration here, where it most worthily should have it—here within the glorious limits of the Old Dominion. We, the citizens of other States of the Union, from the East to the West, we appreciate the expressions of welcome which have been addressed to us this morning in your hearing; we appreciate the consideration that this national occasion of a Federal and of a State Agricultural Society here associated is the living illustration of that most beneficent feature of the organization of the people of the United States, the combination of thirty-two independent sovereign republics in that one mighty Republic—the Union of the States of America. [Applause.]

We appreciate and applaud that fact, and we are therefore prepared to rejoice, as we do rejoice,—we are prepared to be rejoiced and to receive with heartfelt gratification the welcome which is here tendered to us by the people of the State of Virginia. We rejoice to see here present the representatives of the intelligence and the strength, but, above all, the representatives of the beauty and of the domestic virtue of the old Commonwealth of Virginia.

We rejoice that we enjoy the opportunity to see here to-day the exhibition of the agricultural products of the State of Virginia in association with those of other States of the Union, as well as the

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exhibition of the products of those ancillary arts of life which are dependent upon or subsidiary to agriculture. We rejoice that we are thus favored with the opportunity of taking our humble part as pleased spectators in the instructive, interesting, and imposing scene before us.

And having said this, my friends, permit me to add one word in addition respecting the part which has, by the favor of the United States Agricultural Society, been assigned to me personally in the acts of the occasion. Suffer me to say that, as the hour when my own particular duty approaches, as the nature of the occasion, as the dignity of the audience, and as the place of this great assemblage come to be distinctly seen by me, I confess that the sense of the venturesomeness, nay, let me say of the rashness, of the task undertaken by me sinks more and more sensibly into my mind, not merely because of the occasion, not merely because of this numerous audience, but above all, because I reflect that this exhibition of the United States Agricultural Society, associated with the Virginia Central Society, draws here this vast assemblage to the capital of the State of Virginia. I find myself, as it were, in the actual presence of the Commonwealth of Virginia; and as that reflection settles down upon me, it seems to me that all those glorious names of the heroes and of the statesmen of the Commonwealth of Virginia, those glorious names which are household words wheresoever on this broad earth genius is honored, patriotism admired, virtue revered,—it seems to me that all those glorious names are sounding in my ears like mysterious elemental voices of another world. It seems to me that here, on this sacred soil of the capital of the State of Virginia—it seems to me that their immortal memory overspreads us, solemn and sublime, as in a calm and cloudless night the infinite cerulean fields and bright stellar hosts of the vaults of heaven. And whilst all this is full of suggestions of glory, of inspiration, yet it is still more suggestive of oppression and of awe. I beg, therefore, to be permitted now to entreat your most indulgent and charitable construction of whatsoever it may fall to me to say in due time in behalf here, and as the selected speaker of the United States Agricultural Society.

With this craving, by anticipation, of your indulgent consideration, allow me to take my seat, after reiterating for myself and my fellow-guests here, our grateful sense of the welcome you have given us in behalf of the State of Virginia. [Applause.]

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DISPLAY OF THOROUGH-BRED HORSES.

After the ceremonies in the tent, the invited guests repaired to the pavilion overlooking the track, to witness the exhibition of Thorough-bred Stallions. There were eighteen entries, and well did the editor of the *American Farmer* remark, that "the thorough-bred horses were the theme of general admiration. 'Revenue,' a magnificent bay stallion, the property of Hon. John Minor Botts, of Richmond, and the not so handsome, although imported black stallion, 'Fly-by-Night,' whose pedigree is esteemed *de pur sang*, and whose owner is John L. White, Esq., were the especial favorites in this class. 'Red Eye,' the famous racer, and by many considered the most superb animal at the Fair, was 'ruled out,' because his pedigree was not considered unimpeachable."

Stallions not thorough-bred were, in turn, exhibited—forty-one having been regularly entered. Prominent among them was Hon. W. C. Rives's "Emperor," a Cleveland Bay, a fine looking and powerful horse, admirably calculated for "general utility." There were also several fine specimens of the Black Hawk, the Kossuth, the Vermont Morgan, the Ticonderoga, and other well know breeds, some of them having been brought from northern New York, expressly to compete for the prizes.

The display of Heavy Draft Stallions was not large, but after they had left the track, there was some fine trotting against time, which was continued until the hour arrived for closing the exhibition for the day. There was not, however, any "racing," or any trials of speed in which horses contested with each other. Each animal's speed was tested separately, nor was there any attempt at "jockeying."

EVENING EXERCISES.

In the evening there was an interesting meeting at the African church, President Tilghman in the chair, for the discussion of agricultural topics, and the interchange of practical information. Among the speakers was Mr. Rarey of Ohio, whose brother has become so noted in England as a "horse-tamer," and who practices the same method of subjugation.

THIRD DAY.—*Thursday, October* 28.

Another fine day, and no diminution of the crowd of visitors that filled the grounds. The tents which contained the products of the field, the garden, the orchard, and the dairy, were ready for the

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inspection of the judges, and a reference to the list of premiums awarded, shows the variety of specimens of the agricultural and horticultural skill exhibited. They were brought from the gardens of the shores of Lake Superior, the rice fields of South Carolina, the orchards of New England, the vineyards of the western States, and the productive fields of Maryland and Virginia. The grain and corn for which premiums were awarded, remained (by arrangement) the property of the Society, for distribution among Agricultural Societies abroad.

There was but a meagre display of flowers, or of domestic productions, but the specimens of female handiwork, taste and ingenuity exhibited, were numerous and attractive. In these departments no entry-fees were charged, and each exhibitor received a free admission ticket.

GRAND CAVALCADE OF HORSES.

At ten o'clock, the Superintendent of the Horse Department had all the different classes led out in procession. They passed three times around the track, forming a magnificent display, and enabling the crowd of spectators to compare the different breeds. There were 191 entries, (some of them of pairs of horses,) and upwards of two hundred fine horses appeared in the cavalcade.

EXHIBITION OF COWS AND HEIFERS.

The display was not large, but of a high character. The fine Durhams of S. C. Ludington of Virginia; the Devons of H. J. Stranberg, Oden Bowie, and J. H. McHenry of Maryland; the Ayrshires and Herefords of Peter D. Glenn of Virginia, John Merryman of Maryland, and Thomas Aston of Ohio; and the Alderneys of J. H. McHenry and Wm. C. Wilson of Maryland, justified the editor of the *Richmond Dispatch* in speaking of the display as "combining a larger number of first class animals than was ever collected together in Virginia."

EXHIBITING IN THE RING.

This method of exhibition has many advantages. It enables exhibitors to know exactly when their animals will be judged; it allows of the more complete display of the points of the animals; it isolates judges from officious by-standers while they are making up their verdicts, and at the same time it enables thousands to inspect the examination, the result of which they see at once. By introducing class after class of animals, and by making one breed succeed another, the interest is unflaggingly maintained for

hours, and observant spectators are made familiar with the appearance and points of good cattle, horses and other domestic animals.

THE ORATION.

It had been announced that the oration would be delivered in the large tent, but as it was evident that it would not contain one-tenth part of the audience, a platform was erected on the track, opposite the pavilion for invited guests, and the reserved seats for ladies. All around was a dense crowd, and the large number of ladies present lent an unusual interest to the scene. The orator—Hon. Caleb Cushing of Massachusetts—was escorted to the stand by the officers of the United States Agricultural Society, and was thus introduced by President TILGHMAN:

INTRODUCTION OF THE ORATOR.

Ladies and Gentlemen: In introducing to you the distinguished gentleman who has been selected as the orator of the United States Agricultural Society on this occasion, I feel that it would be superfluous to allude to those important services which have rendered his name familiar throughout every part of our extended country. He is well known to you for those services which he has rendered in the councils of the nation; he is well known to you as the one who was the first to represent our country in the Celestial Empire, and who there was influential in extending our intercourse with foreign nations further than it had ever been extended in our previous history. He is familiar to you as one of those who bore the flag of the nation successfully until it floated in triumph over the city of Mexico; he is known to you as one who has since occupied, in the Cabinet, the highest position belonging to the profession of which he is so bright an ornament—and he is also known to you as one of the farmers of Massachusetts.

Gentlemen, it is only necessary to say a single word in explanation of the reasons which, in addition to those just mentioned, led to his selection on the present occasion by the Society which I have the honor to represent. It was deemed peculiarly appropriate that the Fair being held in Virginia, this compliment should be extended to a State whose citizens had been, perhaps, more prominent than any others in promoting the formation and success of this Society, and among whom it is certainly not invidious to mention one whose absence is deeply lamented by all—the Hon. Marshall P. Wilder, the late President of this Society. But this was not the only reason: On that interesting occasion, when the most important step was

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taken towards combining together these infant colonies, I sincerely hope forever, a farmer of Massachusetts was the first to nominate a farmer of Virginia as the commander of the armies of the infant republic. (Cheers.)

Ladies and gentlemen: I trust these will be regarded as ample, and more than ample reasons, for the course we have pursued; and after this announcement, it only now remains for me to close my remarks by introducing the Hon. Caleb Cushing, of Massachusetts.

Loud and enthusiastic cheering greeted the conclusion of the above remarks, and the same was repeated again to greet Mr. Cushing, who spoke as follows:

ORATION BY HON. CALEB CUSHING.

Mr. President: I have to solicit your approbation of the train of thought which it is my purpose to follow on this occasion. You will appreciate my reluctance to occupy your attention with matters of agricultural science, more familiar to you than to myself, and to the discussion of which it would be impossible for me to impart anything either of information or of ornament. I propose to leave the beaten track, therefore, and to submit to you a series of observations, which, if novel for such an occasion, are yet, in my judgment, altogether appropriate to it, and at the same time of universal concernment. (Applause.)

Agriculture is the primary interest and art of man. In its broadest sense, it comprehends all the productions of the earth, natural or cultivated, vegetable, animal, mineral. It is the basis of civilization; it is the indispensable great element of social and political stability and of national wealth and power.

Secondary to agriculture are mechanical productions, the elaboration of natural commodities, utensils, clothing, shelter, the useful arts and the fine arts.

Finally comes the exchange of commodities, that is, commerce.

All these things, in their inseparable connexion, constitute the material interests of mankind. Hence, the natural and necessary subject of attention at assemblages like the present is of the material interests of society—not excluding moral interests. God forbid! Material interests are in subordination, always, to moral ones. But, on such occasions as this, a disquisition of theology or of ethical philosophy would be as little pertinent as one of rhetoric or logic; although, meanwhile, the latter are to be assumed for the framework, and the former for the animating spirit, of all our thoughts

on this and on every other occasion. I repeat, our natural and necessary subject here is of the material interests of men, and, at a meeting of the United States Agricultural Society, of the material interests of the people of the United States.

It is our material interests, then, in certain particular relations which constitute my subject, in order to the due comprehension of which, it needs that we proceed, first, with a few brief touches to analyze, and to set forth in plain view the distinctive elements of our actual condition, geographical, social, and political.

There are four great regions of the earth, two in the Old World and two in the New, which, by reason of their geographical unity of character, within defined limits but on a vast scale, are the natural seats of pre-eminent and powerful empire. They are China, Russia, Brazil, and the United States. In other regions of the earth are immense fertile plains, affluently watered by rains or rivers, as in the valley of the Ganges or the Indus, of the Euphrates or the Tigris, of the Po or the Loire, of the Orinoco or the La Plata; but how secondary is each of these to those mighty combinations of earth and water, of which the land borders of the Yang-tze, the Volga, the Amazons and the Mississippi, are but samples, in the favored countries of China and Russia, of Brazil and the United States. Comparing these two last named countries together, that portion of the United States which lies between the Atlantic Ocean and the Rocky Mountains, most nearly resembles China in soil, climate, rivers, relation to the earth's cosmical motion and other natural facts, and is alike susceptible of receiving and sustaining the same numerous population. In geographical configuration, but not in climate, the same part of the United States also most nearly resemble Brazil. But the similitude in geographical facts is closest between the United States and Russia. Alike, we extend from the Atlantic to the Pacific Ocean, accomplishing between us the circuit of the earth. Alike, with large deserts and lakes and gold-bearing mountains to intervene, in the territory of each, great river systems flow through valleys and prairies of immense extent, and of marvellous fecundity, into the opposite waters of the Atlantic and Pacific. Each of them stretches along the temperate zone of a continent, on horseback, as it were, across its loftiest mountains. And each of them, as a region of earth, and speaking now geographically only, possesses that irrepressible self-impulsion of greatness, which is independent of human institutions, and defies all external or internal causes of retardment—because, in each of its incalculable capacity of population, by reason

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of its soil, its rivers, its climate, and its maritime position—because of the unexhausted superabundance of untilled virgin land in each, inviting the care of the cultivator—and because each, of course, in the exhuberance of its young vigor, is leaping onward to the day when it shall be the seat of power of hundreds of millions of that excellent white race of the men of Europe and Asia.

For the second great elemental fact in the condition of the people of the United States, is that we are of that master white race, which, wheresoever a lighter shade of mankind comes in contact with a darker, whether Manchus with Chinese, or Mongols with Hindus, or Arabs with Africans, or Europeans; with either, the former rules the latter, as if by manifest charter of the Providence of God. I say we are of the master white race; and may I not say—without derogation of the Slavonic branch of it, which has its destiny of greatness yet to attain, and, therefore, its qualities to produce—may I not say, that we of the United States—in that conjunction of the Teutonic and Celtic ingredients which we make—that commixture of English, Scottish, Irish, German, French, Scandinavian, of which we are—may I not say that we resume in ourselves the natural qualities of race appertaining to the demi-god-people of modern Europe, Britain, France, Germany?

Our political institutions are the next great fact in the condition of the United States. It is a trite remark to say, that the men who planted the parent colonies of the United States, were refugees for opinion's sake. In no small part they were so, but with numerous diversified and contradictory conditions of opinion. Puritans fled from Charles to New England, and Cavaliers from Cromwell to Virginia. Catholics at one end of the scale of religious creeds, and Quakers at the other, sought asylum in Maryland or in Pennsylvania. The Reformed of Holland, the Calvinists of Scotland, and the Huguenots of France found themselves together in New York. Nay, if the Fifth Monarchy men of the English Commonwealth took refuge in Connecticut, so did the Jacobites of extremest loyalty in Carolina. And while Cotton proposed a theocracy of the Saints in Massachusetts Bay, Locke in Carolina undertook to found a feudal State as complicated, and as impracticable also, as that of the Assizes of Jerusalem. And, after all, it was the spirit of adventure and material interests, quite as much as any theoretical opinions, either in religion or in politics, which, then as now, sent forth colony after colony from the shores of Great Britain and of

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Ireland to those of America, and thus laid the foundation of the United States.

Meanwhile, diverse, and apparently irreconcilable as were the opinions and purposes of the people of the colonies, they were subject to the all-controlling influence of two great facts, which fused them together, and prepared them to be in the end the one people of a Republican Union.

In the first place, the predominant race of the colonies was that of the British Isles—with the intellectual condition of that race, its vigorous language, its proud historical memories, its manly political thought, its eminently practical character, its legislative guaranties of property and personal right, its trial by jury, and its representative institutions. The Edwards and the Henrys of the brilliant days of the Plantagenets and the Tudors were the makers of law to us, and Coke and Bacon its expositors; Chaucer and Spenser, Shakspeare and Milton, were, to us all, the perennial common founts of poetic inspiration; the glories of the Black Prince and of the Bruce were ours, the victories of a Wallace and a Talbot were ours; nay, ours the very blood of the Wentworth and the Stuart, as well as of the Fairfax and the Cromwell, the Macdonald and the O'Donnell. Our minds were moulded in the indestructible outline and the statuesque proportions of the mind of Great Britain.

In the second place, the emigrants of England, of Scotland, of Ireland, of Wales, stood here in the sole presence, as it were, of adorable Nature, and her works, as Adam and Eve may have walked with God in the paradise of Eden. Deep in the primeval solitudes of America they lived,—inured to hardships and familiar with danger,—retaining here their paternal and maternal traits of manliness, heartiness, beauty and strength, but shaking off, as they left their native land, the hollow forms and false conventionalties of the Old World. Aye, by the green banks of the James and the Potomac, the Charles and the Merrimac, brave men and fair women, the fathers and the mothers of heroes, lived and loved; and, though kings and courts were wanting, yet, nobler than all that, honor, and faith, and truth,—

> ———*Pudor, et Justitiæ soror*
> *Incorrupta Fides, nudaque Veritas*—

dwelt in the forest homes of our fathers of Virginia and Massachusetts; and so—naturally, spontaneously, necessarily—as the pine or oak in the wilderness, as the eagle on the mountain top, as the

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sunlight in the morning sky—the spirit of independence appeared in these wilds of the New World.

I say, it is mainly in these two facts that we are to discover the embryo-formation of the present institutions of the United States. Elective and representative institutions, which are the essence of republican government, we did not create, but we brought them with us from England, as we did the system of laws for the regulation of private rights, which still subsist and obtain among us, and lie at the foundation of republican institutions, in each one of the States, even of republican America. For the skeleton of the British Government is a single executive head, a legislative assembly of two chambers, and a free judicature of duly associated learned men and men of the people; and this is the skeleton, also, of the government of each one of the States of the Union. It is true, that in Great Britain the executive head is hereditary, or, at least, not periodically elective. It is true, moreover, that the upper legislative chamber is of mixed hereditariness and executive appointment; whilst each of these agents of sovereignty is elective in the American States. But still, the change here was in the method of designation, not in the constituent parts of the constitution; and this change composed one-half of the Revolution, the other half being the consummation of independent government, by the formal separation of British America from British Europe. I say, the *consummation* of independent government—for the establishment of *inchoate* independent government by legislative assemblies seated here, was almost the first public act of our colonial forefathers. And so, the Thirteen Anglo-American Colonies were transformed—may I not say, transfigured?—into the Thirteen American States.

Now, I pray you to note,—for it is material to what I shall have to say hereafter,—that in all this, there was no job-work of political theorists. The Declaration of Independence, it is true, in which the united Colonies announced the fact of their political separation from the Metropolis, and the inducements of the act, did preface the exhibition of those inducements with relation of the general principles of self-constitution and self-government, appertaining to every State or people; and its author, Thomas Jefferson, was accustomed, in his contemplation of society, to look beneath its surface into the philosophy of social organization and of government. But he was, at the same time, most practical in his objects, and, in practice, always aimed to conciliate together the two co-essential conditions of liberty and of order. He, as little as Adams, thought of creating

a theoretical speculator's republic. It was their common thought to organize the existing society, not to invent a new one. Of such inventions, enough were to be had in those days. Theorists abounded, universal reformers—men wise overmuch in their own conceit always, yet, sometimes, not without public estimation. Such men, as we have already observed, had tried their skill in the New World. The Saints of the English Commonwealth did their best to fasten a pure theocracy upon New England. The Quakers, those visionaries of the denial of the force of "ordinances" in time of peace, and of *ordnance* in time of war, had fair play in Pennsylvania. Nay, the most approved of all British thinkers, and writers on political theory, John Locke, had the two Carolinas placed in his hands to experiment upon *ad libitum;* and the constitution which he gave, the sum of his wise theories, vanished like a bubble at a breath of the air of America. Theories had to bend to facts, not facts to theories. And thus, I repeat, the political organization of each one of the Anglo-American Colonies, and subsequently, of each one of the American States, happened; it came to be; it was not fabricated by sophists and speculators; it was born and grew as Man himself grows, by the fruits of the soil and by the sun and air. And, like Man himself, also, those constitutions grew up, though with individual differences, yet with absolute, but unconcerted identity of general composition, form and nature; so as to demonstrate, by the most palpable and most incontrovertible evidence, that they were the common result of the same and only cause, namely, the transplantation of the Mother Country type of government into the wilderness of America. Nay, look,—there, before our very eyes, are not the same causes this day at work, producing the same results, I will not say in Canada merely, but in that other New World of British Australia?

By such means, then, it came to pass that in Massachusetts, as in New York, in Pennsylvania, in Maryland, in Virginia, in the Carolinas, there was a political organization, not on the model of any theoretical Utopia of a More, a Harrington or a Locke, but of that of the actual and visible government of England, with substitution of elective in place of some of the hereditary and selected public functionaries, and with the addition of a written organic law, by the name of "Constitution;" but even that, in every case, composed, for the most part, bill of rights and all the rest, by compilation from the existing laws of England.

What followed? The military alliance of the new States, it is

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clear, was not the realization of any *a priori* political abstraction or theory, but the practical act of practical men swayed by the moral compulsion of the circumstances of the time, namely, the flagrancy of Revolutionary war waged for the common object of independence of the same common Metropolis. The confederation, we know, was but a continuation of the original bonds of alliance, with imperfect endeavor to make it applicable to peace as well as war. Then came the actual Union. And to remove all possible doubt as to the considerations in which that originated—to prove incontestably that they were practical, not theoretical considerations, we have the declaration of the State of Virginia, which first proposed the change; which suggested the manner of its accomplishment, to wit, by a "Convention" of the States; and which authenticated and proclaimed its inducement and object, namely, the protection and promotion of the common *commercial interests* of the United States.

All honor be to the great Commonwealth of Virginia, which thus proposed to substitute for the confederation the present Federal Union; and to her statesmen who participated in the conception, the composition, the adoption, and the perfection of it; to Randolph, who presented its draft; to Madison, whose mind runs through it; to Jefferson, the subsequent author of its chief amendments; to Washington, under whose auspices it was framed and sanctioned, and put in operation, the great commander of the War of Independence, and the great first President of the Union. Honor, immortal honor, I say, to her and to them, for the consummate wisdom of the organization of the Federal Union. May their majestic work endure to the end of time, fraught with inestimable blessings to the future, as to the past and present, generations of the people of the United States! But herein consisted their consummate wisdom, that they were practical statesmen, occupied in the attainable purpose of adapting laws to men, instead of the chimerical one of attempting to adapt men to laws. If it had been otherwise—if, like the constitution-makers of modern Europe and of Spanish America, they had committed themselves to the illusory task of building up a theoretical Republic, they, and their work, would have passed away together, into some of the half-forgotten lumber lofts of history; and we, the people of the United States, should have drifted down the tide of chronic revolution into the gulf of perdition, like Mexico; or despairing of self-government, should, like France, have acclaimed an American Cæsar, or Napo-

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leon, to rescue us by the depotism of the sword from the worse despotism of political anarchy and social chaos.

I say, therefore, once more—honor, immortal honor, to the consummate wisdom of the founders of this Union. No idle theories, no plausible abstractions, no shallow social sophistries deluded them. They sought the solution of a great political problem, namely: given the thirteen American States, with their existing population, organization, forms and laws, to associate them together so as to combine the maximum of secure and efficient external and internal common action of the Union, with the maximum of reserved independent sovereignty of the individual States. And, with the blessing of God, that practical problem they solved in the Constitution of the Federal Union.

The solution, as we see, consists in this: First, that for certain prescribed objects of national interest, as foreign intercourse, whether political or commercial,—peace and war, whether domestic or foreign,—the management of common property,—the adjudication of federal questions of law,—and the maintenance of the republican organization in the several States,—the Union is supreme and sovereign, exercising in these relations, by cession of the people of the several States, direct jurisdiction over their inhabitants, pursuant to forms, and within limits of actions, defined and prescribed by the Constitution. And, secondly, that as to all other matters, constituting the great mass of the interests and rights of men, whether of person or property, the original sovereignty within each continues to reside in the respective States.

The consequences of this duplicate organization have responded to the prevision of its authors. No independent State, of whatever form of government, has, during the period of its existence, enjoyed a higher degree of domestic tranquillity than the United States; none existing at the present day exhibits better conditions of apparent stability or durability; and none, except Great Britain in her foreign conquests, has advanced more steadily and rapidly along the path of territorial greatness and material power; and, in the accelerated accumulation, with general distribution of wealth and other results of material prosperity, none exceeds the United States. Meanwhile, the States of the Union have doubled, almost trebled in number: the federal system, which worked well for a few States, works not less well for many; and thus, democratic republican institutions, established within each State, prove capable of adaptation, by means of our federal system, to the whole conti-

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nent of America. That is a spectacle of great sovereign States abiding in peace together, which philosophers and statesmen have dreamed of or hoped to see, but which never yet was exhibited save here now in the New World.

Democratic republican institutions! popular self-government! yes, these are living things, here in the United States. Self-action, the utmost possible degree of individual initiation, of personal independence—that is the commanding and characteristic fact in our condition as a people. It has enabled us to subdue the wilderness and its wild denizens; to people and to cultivate the land before us; to fill it with farm-houses and workshops, mansions, and churches and cities; to extract from the earth its mineral wealth; to navigate its waters; to cover lake, river, and sea with our ships; to rule at home and to conquer abroad; and it sends us swarming forth from our paternal homes here to overspread a continent with our intelligence and our force, with our republican and our democratic thoughts. And so, at this day, the United States are not the United States only—they are, indeed, as Washington, in his later years, was accustomed, with prophetic appreciation, to call them, United America.

We have advanced thus, from the Atlantic to the Pacific, by the impetus of our race, of our national origin, of our institutions, of our ideas, and of the natural advantages of our country. All that was our own; but we have advanced, also, with the simultaneous general movement, intellectual and social, of modern Europe.

I doubt whether that modern Europe has gained upon the old Europe in the conception of moral truth. Do all the learned speculations and bitter controversies of the Church add anything to the divinity and spirituality of the primitive teachings of Christ and the Apostles? Have all the noblest efforts of modern art succeeded in devising a line of beauty, which Greece did not see in the works of a Praxitiles or a Phidias? We pride ourselves on our political institutions, and with good cause; but is there any possible combination of men in society which had not been studied and expounded in the politics of Aristotle? Is there any mechanism of government, any principle of legislation, surpassing those of the Romans? I doubt. We have discovered many things—in astronomy, in geology, in chemistry, in the natural sciences generally, and in mechanic art; but when and where have we discovered a new virtue? We may read this day in the exquisite, but somewhat visionary speculations of Plato, and still better in the more practical and ec-

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lectic essays or speeches of Cicero, as in his admirable discourses on Duty, those on the Nature of God, on Divination, and on the Ends of Good and Evil—we may read all there is most worth reading, anywhere outside of the Bible, in the whole round of human knowledge, on the subject of moral obligation, or the relations of men to each other, to nature, to society, and to religion.

It is not in such respects, then, of Religion, of Ethics, of Aesthetic Art, or even of Government, but in the others hinted at, namely, Physical Science and Mechanic Art, that we can boast of the advancement of modern Europe, and, with it, European America. There seems to be a law of the nature of the human race, in virtue of which, at successive epochs of its earth-history, a particular nation or branch of the human family starts into this or that line of improvement, reaches its ultimate point, and there stops. Each succeeding nation, as it culminates into greatness, takes its own career. And thus it is, that, as the ages of the world roll on, the immense field of knowledge is explored in its diverse directions, and each generation transmits to the next an additional store of discoveries, to be garnered up by us, pile upon pile, as the first fruits of the great final harvest of the Infinite and the Eternal.

What we, to our share of this the Infinite and the Eternal, have accomplished—I mean, we of modern Europe and European America—is, indeed, great, vast, gigantic, monumental. With us, however, it has not been the discovery of new things, the instruments of our progress, so much as that of new uses of those things to the result or end of social improvement. Gunpowder, the mariner's compass, the printing press, the motive power of steam, photography, anæsthetic agency, railways, magnetic telegraph, telescopes, algebra and fluxional calculus—all these existed long ago, in the use or in the thought, at least, of the ancient populations of Asia. I have, myself, seen much evidence of that in the shattered remnants of the mighty past of Egypt, India, and China. But it is only in our hands that the marvellous capabilities of these things have been evoked from obscurity, and subjected to the ministries of life. Thus we have penetrated, by the eye, far into the mysterious depths of the celestial firmament, to reveal the motion of the sun and its satellite planets, to behold another sun, with its dependent solar system, in each one of the glittering stars on high, and to resolve every light speck and train of faintest line in the sky, into its own vast fields of innumerable worlds. We have calculated the movements of the celestial bodies, their several orbits,

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their conjunctions and oppositions, their magnitude and density, with the assurance, and almost the precision, with which we time the wheels of a watch, or measure a barrel of flour or a tierce of tobacco. Nay, by calculation of apparent perturbations in the movement of the remoter planets, we ascertain what and where some yet unseen cause of the disturbance exists, and directing the telescopic eye to that point, a new planet is found rolling on its everlasting rounds. We expose a prepared tablet to the rays of the sun, and they paint upon it a perfect image of whatever objects come within the range of the reflected lines of light. We compress the explosive power, and the flaming scintillations of a thunderbolt within the cavity of a tube, from which to hurl destruction and death into the ranks of hostile armies, or the streets of beleaguered cities. We subject to our will the indefinite expansibility of matter, and so compel it to drag the rail-car on land, and to drive the steamship on river and sea, and to perform the work of a million hands, until our power of action seems limitless almost as creation. We summon out of earth and air the electro-magnetic currents, viewless and occult as a disembodied spirit, and, as with a wish or a flash, they convey our thoughts over continents and oceans, anticipating time, annihilating space. We say to pain, cease, and it ceases. We speak to assembled multitudes, and the winged words we utter, as they issue from our lips, are caught up by the tachygrapher, transmitted by the electric telegraph a thousand miles in the instant, stamped on a million sheets, as if by enchantment, and disseminated over the universe. All these are the marvels of modern science and art—marvels which only do not extort from us continued exclamations of wonder and awe, because, like the great works of nature about us, they have come to be familiar objects of life, they are with us and of us now as life itself is; and which, if it were not so, might impel us, with superstitious self-idolatry, to say to ourselves,—oh, man, art thou, indeed, man, the created; or art thou not rather the creator, God?

Most wonderful, I say, are the intellectual and social activity and efficiency of our times. We perceive it in the teeming earth, in the crowded city, on the burdened sea; we perceive it in the increased productions of society, and its fixed monuments; we perceive it in our colleges and schools, in the debates of the legislative assembly, the courts, the hustings, the pulpit and the lecture room; we perceive it in that unimaginable fecundity of human thought of which printing is the prompter, the minister, and the propagator.

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Take, as exhibitor, and, at the same time, as illustration of this fact, that familiar thing, a newspaper, a rare luxury of the rich once, now the necessary of universal daily life, of the mental life of men, as much as food and drink are of the physical life. How various are the contents of that diurnal sheet; how extensive is the knowledge it imparts; how vast is the field of its action and its usefulness! Whatever wants there may be in the human breast, it shows how they may be satisfied. If it be, as Cowper says, "the herald of a noisy world," with

"News from all nations lumbering at his back,"

so it is the silent monitor of the erring, the solace of the sorrowful, the companion of the solitary, and the messenger to all of thought and reflection. When Shakspeare, with not unlaudable estimation of his own art, said of playing—"Whose end, both at the first and now, was, and is, to hold, as 'twere, the mirror up to nature, to show virtue her own feature, scorn his own image, and the very age and body of the time its form and pressure,"—how felicitously, though unknowingly, did he not represent the uses of the newspaper press at the present time! Faults it has in ample number and degree, undoubtedly; for whatever men do, in their highest as well as their lowest works, testifies to the imperfections of our nature; and the press, with its very shortcomings, is, indeed, the mirror of each passing day, and, of course, with its wisdom and its folly, its virtues and its vices, and all there is of blended good and evil, of Ormuzd and of Ahriman, in the ways of the world. And how the steam engine and the rail-car, and the ocean ship, and the telegraph conspire to accumulate and to diffuse the mass of intelligence in that newspaper sheet! Let us add, as another sign of the advanced state of our society, that the knowledge and scholarship manifested in the columns of the higher class of the newspaper press, whether in Europe or America, are equal now to the famous literary authorship of other times. What a reputation was attained by Junius on account of a few newspaper articles in the London Public Advertiser! And yet many a leading column of the better journals of England, France, Germany, Spain, Italy, and the United States, comes before us day by day, and passes off without our special note, and with no individual fame to its author, though it be higher in composition and purer in spirit than is anything of the hand of Junius.

Pause we, then, here for a moment, to reflect. We are the witnesses and the partakers of that universal mental activity and social

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movement of our day, which, by reason of the combined external force, internal stability, and democratic republican self-action of our own particular society, have their utmost degree of stimulation in the United States. Its general consequence has been the populousness and wealth of particular States, the diffusiveness of internal improvements throughout the country, the indefatigable energy and irrepressible enterprise of the people; in a word, the general greatness of the Union. Has it not at length reached a point of excess of mental activity and of individual enterprise—that is, an excess compared with the means of satisfying all the instincts of thought and action? Have we not a surplus of vigor, an exuberance of vitality—an overfulness, a *trop plein*, of the functions of individual and social existence? I think we have. I do not speak of an excess of agricultural or mechanical production, or of trade—that is, in the sense of political economy. It is not in those relations alone, nor in those chiefly, that I find our excess of mental and physical force as compared with the field for its exercise. I perceive it not less, it seems to me, nay, I perceive it still more, in those present political manifestations and emotions of the people of the United States, which have so universally the same complexion, which are so consectaneous all over the country, as to indicate of necessity a common cause, and most distinctly to point out that cause.

Let us see. Are not we, the people of the United States, from one end to the other, statesmen and law-givers, farmers and mechanics, clergy and laity, given up to the discussion of political abstractions, recondite supposable questions of public law, projects of impracticable change, imaginations of ideal social perfection? Do not these evanescent political abstractions and social impracticabilities come and go, one after the other, so transitory in their nature as hardly to survive the exigences of any single popular election? And these questions, while common to the whole country, are more particularly rife in the northern States, where there are the most schools and colleges, the most books, the most speeches, the most lectures, and the most newspapers; and where the din of reform and reformers, of all sorts of cosmopolitan philanthropy, fills the avenues of intelligence, and obstructs or perverts all beneficial legislation.

How weary, stale, and unprofitable are these visionary speculations of impossible social reform! One set of reformers would have us to dwell in great barracks together, with perfect equality and mutual interchange of all the offices and all the personal and

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domestic relations of life; and another, would have all men furnished with remunerative labor, without stint, and especially without compulsion, but at the expense of the community. One set would have us to eat and drink by rule of law, and what is worse, the rule of their own morbid fancies or valetudinary constitutions. Another set would be content if it could have all matrimonial ties, and, of course, all filial ties abolished forever. Another set would go a little farther, and have all the rights and privileges of men transferred to women, without proposing, however, to relinquish the rights and privileges of women, and have those conceded to men. Another set insists, that all the varieties of the human race—white, black and red—shall be declared equal by law, and all distinctions of political or domestic subordination, as well as of race and color, extinguished. One set would impose celibacy as a universal duty, and another would elevate polygamy into a universal religion. Some would have no government and no laws, leaving all the social relations of men to their voluntary sense of right; and others would have nothing but law, and law to take the place of all the obligations of honor, morality, and religion. And there are not a few who teach assassination as the common right, and the common duty, of all persons discontented with any of the conventional burdens or obligations of society. In these, and many other grosser absurdities of doctrine or opinion, our country abounds. I can produce the evidence of all these monstrosities and follies, their agitators and their apostles, their journals and their conventions, and their experimental establishments, and not go outside of the limits of a single city to find it. And thus it happens that so many people in the northern States have surrendered themselves to the agitation of the most abstract of all possible abstractions, and the most impracticable of all conceivable impracticabilities, the consideration, that is, not of how they shall reform real or supposed evils at home, but how they shall reform others, over whom they have no jurisdiction, who are beyond their reach, and with whose domestic affairs they have no rightful or lawful concernment, namely, their fellow-citizens of the southern States.

We concede to the people of each one of the States within itself,—nay, it is their undoubted right and their privilege, that they discuss at will the abstract doctrines of social philosophy, and try at pleasure all possible experiments of theory and of legislation, and turn and overturn society, from top to bottom, subject to the sole condition of maintaining a republican government. There, within

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itself, is the proper and the only proper field of such questions. We, in one State, may deplore the aberrations of opinion in these respects, which agitate another State, trusting that in the end reason will overcome error and truth prevail. That is the accepted principle of democratic and republican institutions. But the Constitution of the Union forbids us to go further. It forbids one of the United States to interfere with the institutions of another, in the sense either of innovation or the repression of innovation. To do either of these things is to violate the first great fundamental principle of the Federal Union, to wit, the imprescriptible equality and constitutive right of the individual States.

And yet, have we not the spectacle, year after year, of the Congress of the United States,—the constitutional guardian of the common federal interests, and with no authority or duty beyond them,—yet abandoning and neglecting all those interests, month in and month out, through each entire session, to resolve itself into a sort of moot court for the discussion of fancy questions of political philosophy, or to regulate the petty party struggles of some insignificant Territory; or, worst of all, to perorate in set speeches for the use of their own local constituents, on the domestic institutions of particular States, to the disregard of the Constitution and the Union?

Where, meanwhile, are the material interests of the Union, its commerce, its exchangeable productions, its shipping, its finances, its foreign relations? To the Executive of the United States, these, of course, are always present; for the calls of official administration make them so; but Congress, which speaks the popular voice, and furnishes the food of popular emotion, if it tear itself away for a moment from its moot questions and philosophical disquisitions, and unconstitutional intermeddling with the affairs of the States, to attend to the appropriate material interests of the Union, does so but for a moment, and then, after a brief hasty thought bestowed on these, returns to its sectional agitation and its theoretical abstractions. And so the Union, which should march on queen-like,

"In maiden meditation, fancy free,"

staggers along, half thrown over upon some petty territorial question, like a giant staggering and stumbling at a straw in his pathway, while strong enough to lift Atlas upon his shoulders, or in his outstretched hand to uphold Athos.

Alas, that all this exuberance of vitality of the people of the United States should be thus wasted on trifles or illusions! Are no wilds left for us to cultivate, no rivers to bridge, no forests to penetrate,

no seas to explore, no rails to push into the heart of the land, no mines to disembowel, no cities to build, no new States to raise up in the bosom of America? There are; there are. The interests of the Union—the honor of America—the welfare of mankind—the cause of republican government, religion, and peace—the sympathies of our race, of the noble blood of Europe—invoke us to cast an eye of thoughtfulness towards those rich regions of the New World, once the dominion of Spain, and now the prey of anarchy, and of social rather than of civil war;—and all these considerations do most especially invoke us to send forth of the too full of our own vital force for the redemption and regeneration of unhappy Mexico.

Unhappy Mexico! The initial step of her national independence was not, like ours, a Congress of the Colonies deliberately pronouncing and preparing to maintain it; but a tumultuary uprising of Indians warring on white men. Such was the revolutionary *Grito* of Dolores, under the auspices of the Priest Hidalgo. The second step, that of the Priest Morelos, was no better; for this, also, was but another tumultuary insurrection of Indians. The third step, Iturbide's Plan of Iguala, professed to give equality to the two races, European and Indian; but that, of course, did not satisfy the latter. Since then, forty years of revolution and of domestic or foreign war have elapsed, with gradual expulsion or extinction of the white race; and now, from end to end of the land, while the sillily pretentious party cries of liberal, constitutional, federal, central, pure, and what not, are the watchwords of contending factions, efficient alike only to waste their common country, that country a plague-spot of social war all over, is fast losing all the attributes of a civilized State, and relapsing into aboriginal barbarism. Those of the departments nearest the United States are already half depopulated by the incursions of the nomad savages; the more central and populous departments are overrun by red *guerrilleros* and robbers, the plantations ravaged, the cities worse off than if sacked by foreign foes, and the white men cowering in presence of the omens of coming disaster; while the extreme southern departments are already at the mercy of their resident *Pueblo* and *Sierra* Indians.

As to our intervention to stay this surging deluge of calamity, it is a question of amicable international negotiation, not of unconstitutional intermeddling with affairs not rightfully concerning us; it is not a question of the conquest of a neighboring people, but of their salvation; it is not a question of hostilities, but of commercial union and protective alliance.

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When America had been discovered by Europe, it was not the voice of the Pope, but the voice of God, which gave to them the New World to occupy, to christianize and to civilize. And so, now, the will of God seems, by evident signs and portents, to call on us to intervene as a nation, for the salvation of the people of Mexico.

We frequently hear of the American policy of excluding Europeans from America. I think that much of what is said on that subject is somewhat vaguely said; since they, who say it, seem not to remember that all along our northern frontier there is a British America on the one sea, and a British Columbia on the other; and that while we are absorbed in the discussion of metaphysical subtleties, and doing little or nothing to bind our Atlantic and Pacific States together, England is, with our aid even, attaching those colonies more closely to herself by an ocean telegraph, and to one another by a continental railway; so that not ours, as it ought to be, but hers, shall be the line of communication from the Atlantic to the Pacific. Let that pass. British America, after all, has her own republican future, plain and assured, before her. I assume that our predestined lines of expansion, now, at least, are to the West and to the South. If Cuba lie in the path of that destiny, so much the better: but that Mexico must, and does, I religiously believe—and I would have it so; not in the sense of animosity, but of friendship—not by the act of frivolous, irresponsible, mischievous, private invaders, but by the deliberate, efficacious and official action of the Government of the United States.

If any thoughtful persons contest this—if, apart from the question of expediency, they doubt its rightfulness, and, therefore, oppose the continuation of the advancement of the United States—let them tell me by what arguments they justify the beginnings of that advancement, and its progress thus far—nay, let them tell me by what rule of right we stand anywhere in America? Where is Powhatan? Where Massasoit? Where Sassacus? Is not the occupation of any portion of the earth by those competent to hold and till it, a providential law of national life? Can you say to the tide that it ought not to flow, or the rain to fall? I reply, *it must.* And so it is with well-constituted, and therefore, progressive and expansive nations. They cannot help advancing: it is the condition of their existence.

When, in a celebrated State paper of the last Administration, three eminent statesmen, one of whom is now President of the United States, alluded to this law of national life as applicable, in

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assigned contingencies, to the relation of the United States to Cuba, the suggestion was reprobated, in some quarters, as a political heresy. Was it so? Did not Washington himself, reserved as he was habitually in speech of such matters, express the same idea in one of his letters to Lee, anticipating, with comprehensive precision, the commercial connexion between the waters of the Atlantic and the Mississippi, and twenty years beforehand, the acquisition of Louisiana? His words are—"Whenever the new States become so populous and so extended to the westward as really to need it, there will be no power which can deprive them of the use of the Mississippi." I pray you to weigh well these words—to penetrate into the very core of their inner thought—and then decide, if you can, at what point in America they cease to have significance.

The United States are already most beneficently, as well as gloriously, involved in the fortunes of Mexico. What waste wildernesses of undiscovered wealth, prosperity and happiness were not Texas and California before their association with us? Nay, the presence even of the armies of the United States in Mexico was a benefit to her, rather than a prejudice. Never before or since did the material interests of the Mexican Republic better flourish; never before or since did she enjoy more of substantial peace or security of persons and property; never, elsewhere, was a conquered country so favored and so treated as the friend and ally, instead of the prey of the conqueror. When Zachary Taylor, that illustrious son of Virginia, conducted the victorious eagles of the Union from Palo Alto to Resaca de Guerrero, and from Monterey to Buena Vista—when that other illustrious son of Virginia, Winfield Scott, conducted the same victorious eagles from Vera Cruz to Cerro Gordo, and from Padierna to Churubusco and Chapultepec, and at length planted the banner of the Union on the site of the old Teocalli of the Aztecs—as they severally marched onward from triumph to triumph, they vanquished hostile armies in fair encounter, of course, but they respected the persons and property of the people of the country as carefully as if it had been their own, and they occupied the territory of Mexico, its cities and its hamlets, as peaceful governors, not as hostile masters. And if you, the men of Virginia, who, as I right well know, furnished to that war the most numerous and best appointed of all the many regiments of volunteers which served in it, did not have the good fortune to participate in its glorious battles, it was honor enough for you to have been the mother of its great commanders, Taylor and Scott. They, I say, occupied Mexico

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in the spirit of friends, rather than of enemies. And the Federal Government of that day, James K. Polk its President, James Buchanan and William L. Marcy, its Ministers of Foreign Affairs and of War, manifested, in the conduct and conclusion of the war, the most noble forbearance towards Mexico, the most considerate generosity;—as, indeed, in less critical emergencies, have other administrators of the Federal Government. I reiterate, then, that the sum of our national action, respecting Mexico, has been conceived beneficently and so conducted. And I assert, what I believe to be true, the double proposition; first, that the people of the United States desire, expect, and *intend* sooner or later, to interpose in Mexico; and, secondly, that the interposition will be in good will towards her, and with conviction of the common utility of such intervention as well to Mexico as the United States.

And who shall gainsay us when that day arrives? Spain?—I trow not. Suffice it for her, if she have no earlier or other cause of quarrel with the United States. France?—We do not call her to account for the progress of her authority in Algeria; nay, we applaud what she is doing there, as in the common interest of civilization; and we should not be sorry to see her or Spain do for the Sheriff of Morocco and Fez, and the bigots of barbarism he rules, what she has done for Algiers. As little right or cause would she have to complain, and as much to approve, were we to interpose for the redemption of Mexico. England?—I think we have no reason to expect—I will not say to apprehend—any jealousy on the part of England. She discerns, now, in the retrospect, what she did not see clearly in the prospect, that while her mission is in Asia, ours is in America. To her, the termination of her attempt to hold us in subjection, was the real commencement of the conquest in India. The Moiras and the Cornwallises, who conquered it for her, learned the lessons of victory at the hands of one, by whom it was honor enough to be defeated, and even so taught, namely, George Washington, of Virginia. England wisely resolves no longer to dispute with us the supremacy of influence in America.

Sir, (addressing Governor Wise,) to you, who now occupy and adorn the executive chair of the Commonwealth of Virginia, let me say—there was a time—now more than twenty years agone you remember, in the days of our youth, in that old deserted hall of the House of Representatives, which echoes no longer to the voice of eloquence—in that time, we resuscitated, we almost regenerated, the life of the United States on the shores of the Pacific Ocean. We

reminded our countrymen that there was a forgotten Oregon of ours, and that alongside of it was a California. At a subsequent time, under the auspices of John Tyler, of Virginia—a name never to be mentioned by me but with reminiscences of respect—we co-operated to "pluck up," as it were, Texas "by the locks," and bring her into the Union. In that so wretched, that so miserable Mexico, there is more than one other Texas, more than one other California, which awaits but the touch of the formative hand, but a breath of the vivifying genius of the people of the United States, to awaken from its lethargy, and become a truly and really American State. When that happens, it will be the signal of regeneration to Mexico, as it will be the harbinger of countless benefits to the United States. You see clearly—no man better knows—and you have in your own comprehensive thought and expressive language described—how intimately connected are the interests of the whole Union, and of this part of it especially, with the other colonial States of America. Shall we not then lift up our voices in unison together again, as of yore, and appeal from the paltry passions of the hour, from its visionary abstractions, and from its unwholesome sectional agitations, to the nobler and better instincts, the loftier ambitions, and the national sentiments of the people, to the end of the greater glory of the Union? [Applause.]

Gentlemen of the United States Agricultural Society, and of the Virginia Central Society, I pray you, in conclusion, to accept my sincere and hearty thanks for the consideration which you have shown me, in affording me the opportunity of thus taking part in your honorable labors, and to accept also the assurance of my earnest wishes, that your public usefulness may be co-extensive and commensurate with the great sphere it occupies, of the material interests of the whole United States. [Continued Applause.]

AWARDS OF PREMIUMS.

Committees on the classes of implements and machinery began to make their awards on Thursday, and the premium-ribands were immediately affixed, giving all subsequent visitors an opportunity to see who had gained the premiums. The sheep, the swine, and the poultry were judged in their pens and coops, to which the premium ribands were affixed.

MECHANICAL DEPARTMENT.

The display of agricultural implements and machines was admitted by all to be the largest, the most attractive, and the most

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"national" department of the exhibition. There were (it may not be amiss to repeat here) one hundred and thirty-four entries for premiums, of which Virginia contributed fifty-seven, New York twenty-three, Pennsylvania seventeen, Maryland eight, Ohio five, Delaware five, Massachusetts three, North Carolina three, Illinois two, Michigan two, District of Columbia two, Rhode Island two, Maine one, Vermont one, New Jersey one, Tennessee one, and Alabama one.

The premiums were awarded to citizens of fifteen different States, and an examination of the awards, on pages 79, 80 and 81, of the *Monthly Bulletin* (appended to this publication) will show the variety, the extent, and the value of this department of the exhibition.

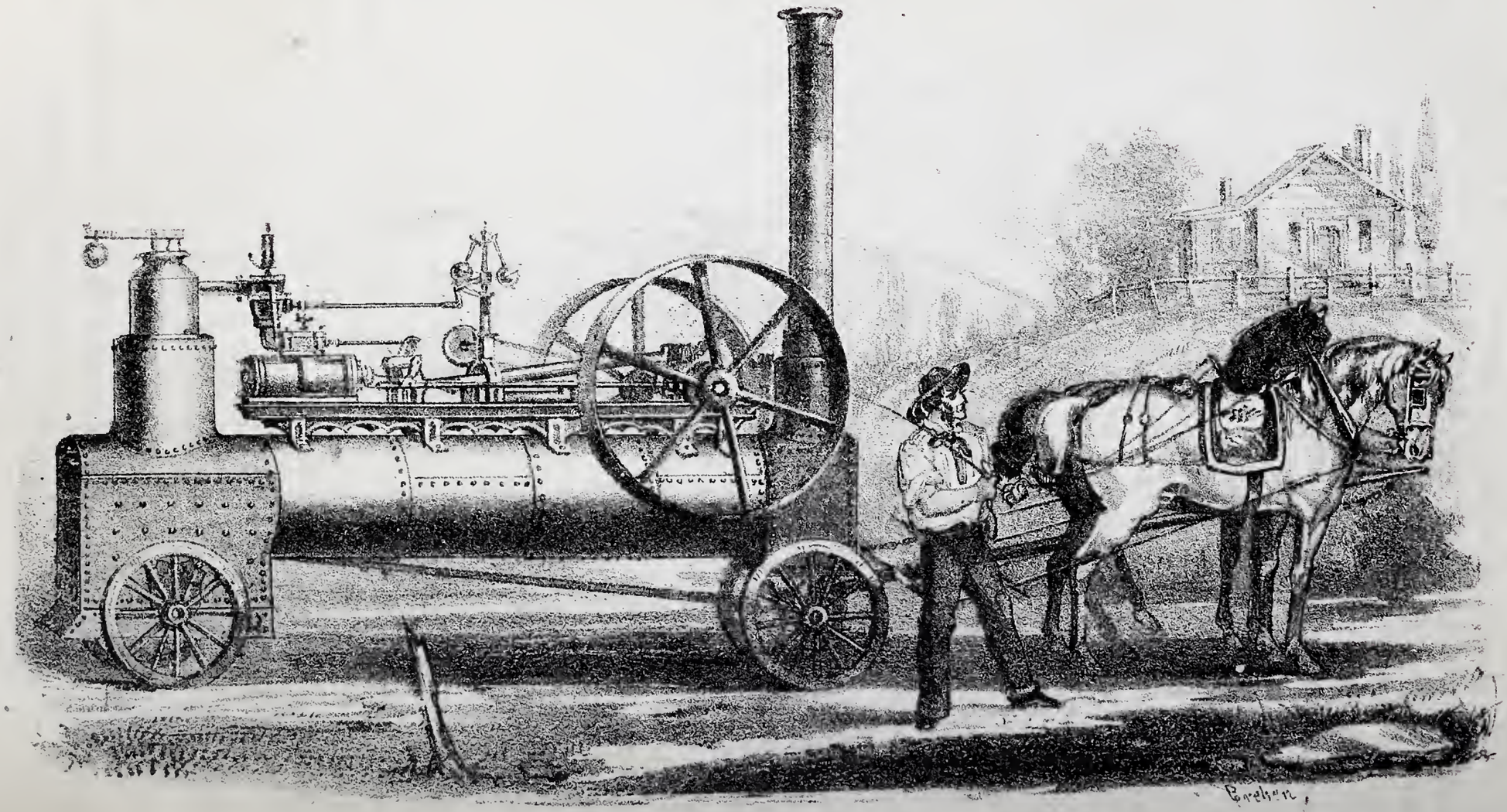
FARM STEAM-ENGINES.

The award of the grand gold medal, for the best steam-engine for farm purposes, excited great interest. "There were," wrote the able chairman of the Board of Judges, "four farm engines on the grounds, of from twelve to sixteen horse-power, three of which were entered for competition. They were all well made engines, and the exhibitors professed to have made improvements upon their former engines, and described the claimed new features, some of which were real improvements. The engine of Philip Rahm, Eagle Machine Works, was a very compact and useful one, and which has had very extensive use among the planters of the South. His arrangement of his heating tubes in a circle was different from the others, and his spark arrester, and the arrangement for heating the water before it was poured into the boiler, seemed well adapted to prevent danger from explosion or fire. Mr. Rahm was the architect of his own fortune, as we were informed by one of the Editors of the Enquirer. From a journeyman in a machine establishment, he, with a little capital, commenced for himself, and has now, after about fourteen years labor, as we understood, among the most valued and extensive establishments at Richmond, supplying engines to all the southern States and to Brazil. His engines are not complicated, and after a few days' instruction, the hands upon the plantation, we are assured, manage them without trouble. The three engines examined were very good ones. The Society's Grand Gold Medal of Honor was awarded to Mr. Rahm—a Special Honorary Diploma to the other exhibitors."

"HORSE TAMING."

Mr. Rarey gave in the afternoon an exhibition of his skill in rendering vicious horses docile, before a committee appointed to

PREMIUM PORTABLE ENGINE.— PHILIP RAHM, RICHMOND, VA.



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investigate it, in the large tent. The *Richmond Dispatch* thus described the test:

"About a hundred persons were admitted to witness the performance. The animal on which he experimented belongs to Mr. John F. Lewis, of Rockingham, and has a very dangerous habit of letting her heels fly, regardless of consequences, whenever any attempts are made to ride or drive her. A gentleman mounted and rode her a few times around the amphitheatre, and he may thank his skill in horsemanship that he did not find himself rolling in the saw dust, with the prints of two iron shoes on his skull.

"Mr. Rarey then appeared, bowed to the audience, and went on with a harangue about the science of breaking and managing horses generally; after which he approached the mare, (whose name is "Victoria," but should be *Xantippe*,) and certainly succeeded in subduing her in a remarkable degree. She reared and pitched terribly at first, but gradually yielded, and soon laid herself quietly down in the saw dust. He then sat upon her neck, then upon her rump, caressing her gently, and Victoria did nothing more than to raise her head as if to see what he was going to do next, but a slight wave of his hand caused her to straighten out again. He next struck her fore hoofs together, then lay down and placed her hinder hoofs upon his neck; to all of which she submitted without objection. Several experiments were made with a buffalo robe and an umbrella, but the mare exhibited no ill nature. At last he got astride of the animal, without bridle or saddle, and used several methods to test the success of his endeavors, all of which seemed satisfactory, until he started her off, when up went her heels again, as high as before. He thinks, however, that he will bring her down to proper discipline in two or three trials. His chief instrument in the art of horse taming is kindness, and by it, with the observance of certain rules, he maintains that any vicious horse may be rendered docile and manageable."

EVENING MEETING.

The second evening meeting of the United States Society was held at the African Church, President Tilghman in the chair. The subject of discussion was "*Farm Implements*," on which interesting remarks were made by Messrs. Wetherell of Massachusetts, Watt of Virginia, Spangler of Pennsylvania, Rogers of Maryland, and other gentlemen.

AGRICULTURAL BALL.

An "agricultural ball" was given in honor of the exhibition, at night, in the spacious saloons of the "Ballard House" and the "Exchange Hotel," which are connected by a covered bridge across the street between them. Those present described it as a magnificent entertainment, graced by fair and gifted representatives from the different sections of the country.

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FOURTH DAY.—*Friday, October* 29.

The weather was unfortunately unpropitious, the rain falling in torrents, but there was nevertheless a goodly attendance of gentlemen, with a few ladies.

EXHIBITION OF HERDS.

The Herds were brought, each breed by itself, into the large tent, where they were examined, and there was an unanimous expression of the spectators (which has been adopted in the published report of the committee) that "no one of them had ever before seen a finer display of cattle, as far as quality is concerned."

DELIVERY OF THE VALEDICTORY ADDRESS.

As there was no reason to hope that the storm would not continue for several days, the Executive Committee requested the Hon. W. C. Rives, to deliver his Valedictory Address at noon, in the large tent. It was filled with those who had braved the storm, and at twelve o'clock, President TILGHMAN, in a highly eloquent extemporaneous address, introduced the gentleman who had so kindly consented to conclude the public ceremonies on the exhibition grounds, and who was not deterred from gratifying the expectant assemblage by the unfavorable weather.

ADDRESS BY HON. WM. C. RIVES.

Fellow-citizens, Ladies and Gentlemen: The occasion which has brought us together, and of which the various services are now about to be closed, has been attended with many satisfactions, and has not, we trust, been without useful and profitable instruction to us all. To us of the "Old Dominion," it has been attended with both honor and pleasure. It has given us the proud and valued privilege of receiving on the soil of Virginia, and welcoming to our hearth-stones and our hearts, our brother farmers and friends of the other States of the Union.

There has been no such family gathering within our limits since the memorable occasion, just seventy-seven years ago, in this glorious month of October, when our brethren from the North and the South, (the Great West was then the infant Hercules in his cradle,) came trooping in, with the splendid chivalry of our gallant European ally, to assist us to deliver our soil from invasion, to devote it thenceforward to the peaceful labors of the husbandman, and from the redoubts of Yorktown, to wave the banner of liberty and independence over the whole continent. On a more recent occasion, it

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is true, our sister States deputed a few of their distinguished citizens to join us in the monumental honors decreed by his native State to the great farmer chieftain, who led our fathers in that eventful scene; but now we hail, as our guests, the sovereign people in the persons of those who, like ourselves, are engaged in the quiet and industrious pursuits of private life, and who bring their household deities along with them.

No where, we flatter ourselves, could such a meeting have taken place with more of fitness and propriety than in this ancient commonwealth, now the central State, on the Atlantic seaboard, of our extended Union, the theatre of the closing scene of the Revolution which established our National Independence, the parent of the Federal Constitution which made us one people, and ever cherishing with fidelity and affection, while they have been respected by others, those fraternal relations which belong to the members of one great family of confederated States. [Continued applause.]

Here, in the midst of these hallowed and endearing recollections, we have joyfully welcomed to this arena of friendly competition and kindred communion our fellow-citizens from the North and the South, from the East and the West; and even when any one of them has borne off the prize of excellence and superior skill from our own neighbors or ourselves, we have seen it without envy or repining, for it was a brother who won the well-merited meed. We all remember, in our early reading, how Hector was incensed at the success of Paris in carrying off the prize of the magnificent and coveted bull of Ida, so long as he supposed his fortunate rival to be a stranger; but the moment it was revealed to him that the successful competitor was his brother, his feelings of jealousy and rage were turned, not merely into acquiescence, but into a generous sentiment of fraternal pride and satisfaction. [Applause.]

In that enlarged and comprehensive view of American agriculture, however, which forms the province of the National Society, now holding its annual festival here in the bosom of Virginia, in harmonious conjunction with one of the Societies of the State, the agricultural interests of the different States are rarely presented in any relation of rivalry. Nature has so bountifully endowed the grand and teeming continent on which we live with diversified aptitudes and capacities of production, that the rural economy of the United States embraces almost every variety of culture known to the industry of man; and to each is assigned, for the most part, a distinct and appropriate locality, so separated and defined as not

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only to avoid the danger of injurious competitions, but to make the productions of one minister to the natural wants and deficiencies of another.

'Tis thus that, in the beneficent arrangement of our great national heritage as an agricultural people,

"All nature's difference keeps all nature's peace."

To one region have been given the staples of Cotton and Rice, to another the Sugar Cane, to another a plant whose conventional use has made it an article of great and increasing commercial value, Tobacco; one is endowed with peculiar advantages for the production of Wheat, another for the Grasses and live Stock, another for Wool, another for Hemp, another for Mining, another for Timber. To all is common the great American cereal, Indian Corn; but as its abundant production is almost wholly absorbed in its lavish domestic consumption, it gives rise to no serious or disturbing competition among the producers.

Never was the national agriculture of any country so all-sufficient in itself to supply every want of its inhabitants, whether for food, clothing or lodging—yielding in overflowing abundance the raw materials for manufactures, and multiplied and most valuable objects for profitable exchange at home and abroad—adapted, by the diversity of its productions, to render the different sections mutually tributary to each other's wants—thus encouraging that division of labor which, under certain limitations, is as essential to perfection in agriculture as in the other arts—and able to build up, by natural and spontaneous influences properly cultivated and wisely directed, the vastest, the most complete and harmonious system of internal commerce which the world has ever seen.

In this great scheme of American agriculture, no one branch pretends to any special favor or peculiar prerogative above the rest. All stand upon the same broad platform of mutual liberty, and the security of skill and labor in the enjoyment of their honest rewards. Each seeks its development, under the kind auspices of nature, in the soil and climate fitted for it, seconded by the creative powers of human industry and science co-operating with the free air, the bounteous rain, and pervading light of heaven. [Applause.]

We sometimes hear it said that Cotton is King; but the agriculture of America, as its political constitution, is Republican. It owns no dynasty of privilege or power. If any one of those noble plants which constitute the chosen vegetable races of the new world could fairly aspire to Royalty, it would be that prince of ce-

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reals, Indian Corn, a proud native of the soil, lifting high its imperial form and tasseled banner above all its compeers, and on the universality of its uses and its presence, founding a claim to universal sway. But the genius of American agriculture, whose vital principle is freedom, accords invidious pre-eminence to none.

It is in this catholic and parental spirit of equal regard for the agricultural interests and pursuits of all the States, that the National Society, of which you, Mr. President, are the honored representative and organ, desires, I am sure, to exercise its fostering influence. It holds its great annual meetings, in succession, in each one of the States; seeks, in co-operation with the local societies of each, to stimulate and develope to its highest perfection the agriculture of each, and embracing thus, in the grand cycle of its progressive revolution, all the members of the confederacy, it warms and vivifies them all, like the bounteous luminary above us, by the rays of its countenance and encouragement.

Nor is it by its premium list alone, or, indeed, in any noticeable degree, that this beneficent influence is exerted. It is by bringing together periodically, at one common point of re-union, the agriculturists of the different States; enabling them to compare personally their different productions, their different systems of husbandry, their different modes of culture; making them conscious how much these very diversities serve to unite them by rendering them mutual customers and tributaries to each others' wants, instead of jealous and encroaching rivals; that they are the children of one great and glorious country, engaged in the same pious effort to make it fruitful and and prosperous and lovely, to whom seed time and harvest, the early and the latter rain, the palmer worm and the canker worm, bring the same joys or sorrows; and that they have only to know each other and to commune with each other, to feel that they are brethren in sympathy and affection, as well as in interest and in duty.

There is one other effect of these periodical assemblages of the agriculturalists of the Union, which I cannot forbear to notice. They are thus made sensible of their collective power and influence, for good or evil, and of their consequent responsibility, in all that concerns the destinies of the Republic. If there be any class of citizens, more than another, constituted by nature and Povidence the guardians of a country, it is those whose daily pursuits and interests connect and identify them with the soil of the country, who are bound to the country by ties not readily or lightly dissolved,

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and who must meet inevitably whatever fortune, adverse or prosperous, may betide it. [Applause.]

Their tranquil employments too, in the constant presence and communion of nature, and remote from those conflicts of human passions which agitate more or less the crowded centres of population, prepare them, in an especial manner, for the calm and sober exercise of those controlling functions which, in Republican governments, devolve upon the great body of the people. The history of Republics, both ancient and modern, proves that the landed interest has, in all of them, been the conservative element by which only liberty and order could be harmoniously united. The convulsions and revolutionary resorts, of which some of our cities, within a few years past, have been the theatres, are beginning to teach the same lesson here, and may produce the conclusion that in America, as elsewhere, Republican liberty, amid the storms and tempests to which it is exposed, will find its only safe anchorage, at last, on the firm foundation of the soil.

But, however this may be, the agriculturists of the United States, all will admit, have a deep and precious stake in the common weal, and a highly important part to play in the public duties of the State. Without indulging the remotest jealously of the other great branches of the National Industry, a jealousy that would be nothing less than suicidal, for commerce and manufactures are the acknowledged and indispensable handmaids of agriculture, it is incumbent upon them at all times to keep watch and ward over those public liberties and interests, on the preservation and due care of which their own welfare so vitally depends.

Patriotism is a plant, then, whose growth should be encouraged by agricultural societies, along with those other plants which engage so much of their attention. It springs spontaneous in the heart of the farmer, and requires only light, and air, and free communication to give it its fullest development. It is in scenes like this that it grows and expands with fresh vigor; and we learn to love our country more, as we see how much it contains worthy to inspire a common sentiment of interest and affection. The mission of American agriculture is a moral no less than a material one; and if we shall go forth from this meeting, as I trust and believe we shall, penetrated with a just conception of our noble calling in all its relations, fortified in our loyalty and devotion to a common country, strengthened and renewed in our social and civil affections, the week we have spent here together, in brotherly communion around the

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domestic altars of Virginia, will be among the proudest in her annals, and be blessed with rich and enduring fruits to the cause of national harmony and union. [Cheers.]

EXHIBITION OF HORSES.

After the Valedictory Address, there were exhibitions of matched horses, of trotting-mares and of ponies, according to the programme, although the weather was very inclement.

HORSE TAMING.

Mr. Denton Offutt gave some interesting public experiments in subjugating vicious horses, and was very successful. He also stated his claims to the first discovery of a system of "horse taming," and announced his intention of presenting them to Congress, accompanied by a petition for a national remuneration.

THE BANQUET.

On Friday evening the Complimentary Banquet to the invited guests of the United States and Virginia Central Agricultural Societies was given at the Exchange Hotel, and fully came up to the expectation of all, in the elegance, taste and costliness of the entertainment and the brilliant, as well as highly appropriate tone of the speeches.

There were about one hundred guests assembled, comfortably grouped off at six elegantly-laid out tables, at the head of one of which General Tilghman, as President of the United States Agricultural Society, presided, with Lord Napier at his right. At the opposite extremity of the room, sat James Lyons, esq., with the Hon. Caleb Cushing, and other distinguished gentlemen, representing various States of the Union. After the good cheer had been duly honored, the President rose, and (after the applause with which he was greeted had subsided) thus addressed those present:

REMARKS OF PRESIDENT TILGHMAN.

Gentlemen: During the week now drawing to a close, we have seen passing before us an epitome of all the varied operations in Agriculture which mark the successive seasons of the year. We have beheld those implements by which the earth is first prepared for the reception of the seed; we have had presented to us a collection of the various cereals upon which our support and our interests so largely depend; we have seen the numerous animals which contribute to the comfort of man, and we have also witnessed those still more interesting developments of mechanical skill by which the

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fruits of the husbandman are garnered into the storehouse; and, now, gentlemen, we have at the close of our labors invited you here to partake of some of these fruits at an agricultural banquet. It is not only, gentlemen, an agricultural banquet, but it has been dignified by the name of a national banquet; and to show you that this appellation has not been unworthily assumed, it is only necessary to make a brief enumeration of the several parts of the country which have participated on this interesting occasion. Twenty-five States have been represented by gentlemen connected with the fair; twenty States having contributed articles for exhibition; delegations are in attendance from seventeen States, and last, though not least, among those who came duly accredited to this the Sixth Exhibition of the National Society, was the honored President of the Board of Trade of Upper Canada, Colonel Edward Thompson. Most deeply do I regret that that estimable gentleman, who from the length of time through which he has been connected with the agricultural associations of his own country, deserves to be ranked with the pioneers of agriculture on the continent of America, most deeply do I regret that he, with many others, could not remain to be present on this occasion. But, gentlemen, we have, notwithstanding, a sufficient proportion of those who have been with us during the week to constitute the large assemblage which is now collected around this hospitable board. Gentlemen, it is a gratifying reflection that so many States of the Union have co-operated voluntarily and cordially on this occasion with the national association for the promotion of agriculture, and it is a further cause of congratulation that they include amongst their number all those most powerful to influence and sway the destinies of the Union, and also all the various portions of our extended country. You are all aware that in every great national question, the States of New York and Pennsylvania, Ohio and Virginia, in consequence of their controlling influence, have been regarded with the deepest interest; and in whatever direction a majority of these States evinced a preference, the palm of victory was always sure to follow. I may almost then state it as a self-evident proposition, that when any important national interest can combine the influence of those great and powerful States, it has secured a sufficient influence to insure its entire and final success. Gentlemen, did the time permit, and were this an occasion on which it were appropriate to enter into details, it would gratify me to talk to you at greater length than I now propose to do. Allow me, however, to call your attention to the fact

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that this Society, like the government of the Union, has also its national Congress, with delegates and representatives from the Agricultural Societies of the several States and districts throughout the country, which, for the last five years, has held its annual sessions at the city of Washington on the second Wednesday in January, and to give you all a cordial invitation to meet us on that occasion.

I have alluded, gentlemen, to the fact that there are here represented a large proportion of the States of the Union. It affords me still greater pleasure to inform you that these States are represented by delegates regularly accredited from the numerous Agricultural Societies within their limits, and especially from those which have been organized by authority of law, and are therefore the recognized representatives of their respective Commonwealths. Among the various gratifying features which have marked the progress of our country, I know of none that affords more solid cause for satisfaction than the number and prosperity of its Agricultural Associations, amounting now to more than eight hundred. Wherever these Societies exist, there agriculture is also found to have attained its highest degree of excellence. So clearly has this been proved by past experience as to leave no doubt whatever of its universal application, and it may therefore be asserted with entire confidence that no more judicious application can be made of a portion of the public funds than in promoting the formation of such Societies. An efficient central organization, to combine the whole under one united and harmonious, would enable every part to derive its proper share of the incalculable benefits of such an arrangement. Whenever this time shall arrive, our country will have reached a degree of prosperity not otherwise attainable.

In the remarks which I had the honor to make at the opening of this present Fair, I alluded briefly to the position occupied by the State of Virginia, and to the period when the Father of his Country evinced so deep a concern in her interests. Among these there was none to which he attached a higher importance than to the connexion between the waters of the Atlantic and those of the valley of the Mississippi, and the power and influence which that connexion was calculated to give to the State of his nativity. I need only refer to the subsequent developments which have taken place in various parts of our country, and especially to the internal improvements of New York, to show how fully the predictions of that great statesman have been verified. But all the benefits of that con-

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nexion have not yet been fully realized. The transit through the State of Virginia is yet to be completed, and although this ancient Commonwealth is making great advances towards improvement both in her agriculture and her public works, by which alone that agriculture can be fully developed, she has yet a great and mighty mission to perform, in collecting within her own borders the streams of wealth which traverse the fertile valleys of the West, and thus achieving a higher degree of prosperity than was secured for New York by the genius and energy of DeWitt Clinton. When that day arrives Virginia will be regenerated, and again occupy that position in our national galaxy which gave her the proud title of "The Mother of States." All honor, then, to the State in which we are assembled; all honor to the great men which she has furnished to the councils of the nation.

Gentlemen, I am sure that I cannot better represent your feelings, and my own wishes, than by giving utterance to a sentiment which is but a just acknowledgment of the hospitality we have received during our present visit. I now propose to you, as the worthiest mode of commencing the enjoyments of this evening, that we shall drink to the honor of the Old Dominion, the noble State of Virginia. [Loud and prolonged cheering.]

REMARKS OF MR. MCFARLAND.

Mr. McFarland remarked that it seemed to be understood that he, one of the humble citizens of Virginia, should respond to the kind sentiment which had been connected with the name of Virginia. He did this with diffidence, because he felt the confusion which is always produced under similar circumstances. They were convinced of the truth of the impartial view which the President of the United States Agricultural Society had taken of their present condition, and only trusted that at no distant day they would retrieve the consequences of past inactivity. He then paid a flattering tribute to Maryland, saying that in its history there was much to admire and imitate. In conclusion, after eulogizing the eloquent orator, he proposed: the Hon. Caleb Cushing, the distinguished son of the ancient Commonwealth of Massachusetts. [Great cheering.]

REMARKS OF MR. CUSHING.

Mr. Cushing gracefully tendered his acknowledgments to the gentleman who had introduced him, for the terms of his sentiment. It was honor enough for any State, ancient or modern, Greek or Roman, whatever it may be on the roll of fame, to be associated

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with the name of the Commonwealth of Virginia, (cheers,) and Massachusetts herself would appreciate it were she present to speak for herself. He then paid compliments to the great men of Virginia—to Rives, to Mason, to Hunter, and Henry A. Wise, of the present day—and said that Virginia and Massachusetts were associated together by the battles of the Revolution, when their common blood was sacrificed to patriotism—ties which man could not sunder. After further remarks, in which he paid a high compliment to the ladies of the Old Dominion, he proposed the health of James Lyons, esq., President of the Virginia Central Agricultural Society. [Cheers.]

SPEECH OF MR. LYONS.

Nobody can be more sensible of the want of qualification than myself, to make a response proper to be made in behalf of the Central Agricultural Society of Virginia to the very kind and deeply impressive remarks of my friend from Massachusetts, (Mr. Cushing,) and yet I cannot refuse to acknowledge his compliments, without subjecting myself to an imputation more grave, in my estimation, than the want of appreciation of his high mental faculties, which I hold to be secondary only to his sound morality, and sound heart, which I value most of all. I rise to say, on behalf of the Virginia Central Agricultural Society, that while we are grateful for the kindness expressed towards us, we are profoundly sensible that it proceeds from an honorable and generous spirit, and is not the result of merit upon our part. Our merit is not that we have accomplished much, but that we have had the good fortune to admit you, sir, and your associates, and the intelligent and honorable men who represent this great interest of this and every other country, to visit this our locality. Our merit has been, that we have been able to induce you to come within this old ground of ours, which, whatever it may be entitled to from others, knows our love to this Union. (Applause.) Mr. President, you know very well that the chart sometimes fails to render service to the noble vessel, and that the compass enables her to plum the track that bears her safely into the desired haven, where she pours out all the treasures which she has born across the billow. In that same spirit it is sometimes true that a single man carries the light upon the shore, and bids the storm-tossed vessel take the track which leads to safety. We have played that humble part; no more. We have been nothing but that little light flickering just upon the shore, which has been caught up by the quick eye of the gallant leader of the National Agircul-

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tural Society, and we have been enabled to open to him our haven, in which he has found safety and security for the ship, and where he has turned out all the treasures with which she was laden. Mr. President, in the name of the Central Agricultural Society—I would to God I was authorized to say in the name of all Virginia—we thank you for it, sincerely, cordially, deeply.

The fair thus far has been eminently—I had almost said—profoundly triumphant. (Applause.) We have Virginia with all her treasure; then we have New York; and we have Massachusetts turning out with learning, logic, and eloquence to gratify and instruct us. (Cheers.) But that is not all; material aid has been furnished. The fair has been not a failure, but it has been successful not only in these striking qualities, but in those other qualities most desired.

But it is no little gratification that we have the cause of agriculture represented here to-night by one distinguished by his connection in our fields, while at the same time he is distinguished by a world-wide fame, and the noble representative of the noblest lady, the queen of that country from which we came—old England. (Loud cheers.) Sir, if she were not the queen by title and prerogative, being such a lady as she is, she would be a queen in the estimation of every American gentleman. (Cheers.) I say it is cause of great gratulation to us that this great interest, which is both State and national, has afforded us the honor and gratification of having present here to-night, in the person of the president of an agricultural society, the distinguished ambassador of England to the United States. And I beg leave, therefore, to propose, on taking my seat:

"The health of our distinguished guest, the President of the Agricultural Society of Selkirk—the Lord Napier—distinguished for leading eloquence and statesmanship, as he is for all the amenities which grace a gentleman. England may well be proud of her peerless Peer."*

After the applause which followed the reading of the toast had subsided, Lord Napier rose and addressed the assemblage as follows:

SPEECH OF LORD NAPIER.

Gentlemen: When I rise to address the distinguished assemby, which has remembered my sovereign and my country, and done me the honor of recognizing my presence at this festival, I reflect

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* *Note by the Editor.*—The origin of the title is, Na Peer, Scotch; Napier, English—no peer.

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with satisfaction, that however ignorant of the noble industry to which you are devoted, and however incapable of justly appreciating the efforts and services which you are rendering in its cause, I may still rank myself, though in a subordinate order, among the true sons and votaries of the soil. I remember with pleasure that my father was an unsuccessful farmer, though a successful writer on the art of farming. I belong to a class whose interests and affections are deeply rooted in the land—a class whose active age is much bestowed on the business of Parliament, or negotiation, or civil government, or on the profession of arms, but whose thoughts in all the vicissitudes of life and strife still repose upon fields and sports, and who ever dream of a late return to the hereditary home. Notwithstanding this foreign vagrancy and diplomatic desertion, I remain a member of the Highland Society of Scotland; and however incredible it may appear to you, I am President of the Pastoral Association of my native county, for the improvement of the breed of Cheviot sheep. With such instincts and associations, you will believe that I do not feel altogether a stranger here, and that I am deeply gratified by the hearty welcome that I find from the brotherhood of agriculturists, in which I claim to be an affiliated, though, at present, an unfruitful member.

Since my arrival in Virginia, my attention has been drawn to the motto of the State—"*Sic Semper Tyrannis.*" This is strong language, and in its utterance it has a reproachful significance in English ears; but when I reflect upon the ancient hospitality of Virginia, I have in my mind the suggestion of a new motto—*Sic Semper Amicis*—always the same to the oppressor, and always the same to the guest—fidelity to freedom and fidelity to friendship are still the bases of Virginia character. The husbandry of America presents in its vast extension and rapid progress a spectacle to which no Englishman can remain indifferent. History offers no example of this swift, resistless, unceasing encroachment of skilled labor over the vacant and fertile domain of the savage and the brute. It is the first triumph of man, equipped with all the accumulated powers of experience and invention, over Nature in her largest limits and her most gracious and bountiful conditions. In the agriculture of the United States we see with exultation a beneficent and spontaneous procession of industry, of which the field is the American continent, and of which the implement is the Anglo-Saxon arm. Such a reflection might alone furnish to my country many motives of thankfulness and pride; but it is equally certain that the Agri-

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culture of America forms one of the principal foundations of the existing prosperity of Great Britain. In the three great staples of cotton, grain and tobacco, imported from the United States, we recognize an indispensable material for our manufactures—a main element in the food of our people, and an important basis for the revenue of the State. While the agricultural products of the United States contribute in a high degree to the resources and power of our government and to the welfare of the industrial community, the land and labor markets of America offer to our superabundant population an inestimable refuge in periods of distress. By this convenient issue the burden of domestic taxation is lightened; our public peace is confirmed, and our political institutions are defended against those disturbances to which they might otherwise be exposed from the passions of men without the means of regular support, and without the hope of prospective improvement. Surely, gentlemen, there is no event in the circle of human actions more pregnant with moral interest than the departure of a humble family from their birth-place to settle in a strange country. It is a subject on which the poets and painters and teachers may well exercise their genius, for it is ever touching and ever new. For my own part, I draw my impressions from the life; and I am the more disposed to revert in fancy to those scenes, for there I find my first associations with America.

Belonging, as I do, to a district of Scotland in which the aspiring peasantry have long been sensible of the benefits attached to emigration, the earliest recollections of my childhood are mingled with the pathetic but hopeful pictures of our people forsaking the rude hearth and the gray skies and the familiar field of toil, and turning their thoughtful faces towards the Western World, at once advancing their own condition by the enterprise, and opening a more generous sphere of labor and of gain to those who stay behind. All the features of such an incident are still present to my memory. There is the stormy dawn of morning on the moor, and the mist trailing on the mountain tops; there is the crumbling cottage, with its smokeless chimney, for the fire of many lives is quenched. I see the gathered neighbors, muffled in their plaids, the restless sheep dogs, and the useless burden of domestic goods; I see the helpless infant, the submission of decrepit age, the suffering wife, reluctant but resigned to go, the elder children pleased with the unwonted tumult, the father grave and firm—then the long partings of those who will meet no more till all the weary are at rest. And

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thus they pass forth, poor, and but half aware of the high mission they fulfil, yet bearing mysterious destinies and the unseen blessings of the promised land, and overshadowed by the Almighty power who silently impels them on their distant course. While recognizing all the importance of the land and agriculture of the United States to the social welfare of the British empire, I cannot deny myself the pleasure of expressing to you the interest which, as a mere virtuoso in rural matters, I have taken in the external aspect of American husbandry.

Dr. Johnson, on being asked what was the summit of felicity, said that if you wish to be perfectly happy here below, you should procure a horse and drive rapidly through a new country, with a pretty woman by your side. [Laughter.] Now, gentlemen, strike out the "pretty woman," and I think the respectable moralist was right, for I have yet to learn of a higher gratification than travelling through a new country. It must not, however, be supposed that the aspect of a new country is always agreeable to the eye. In some respects the prospect is, indeed, often unsatisfactory to the English eye. In the new parts of the country the primitive graces of the landscape are ruthlessly violated, while the artificial trimness to which we are accustomed has not begun. We mourn over the blackened and girdled giants of the forest, each of which would be the sylvan honor of an English homestead—our fastidious taste complains that the furrow is not straight; that the wheat is not clean; that the swamp is not drained; that the sward bristles with obnoxious stumps; then there is a general absence of root or green crops, and we discover a deficiency of sheep—that interesting animal over which it is my peculiar privilege to preside.

In the regions which have been longest under the plough, the vital forces of the soil seem to have been frequently overtaxed; the more valuable cereals are abandoned, and here and there the wilderness resumes its sway. It requires but little reflection to show that these phenomena are the natural and transitory concomitants of the first epoch of tillage, which is hasty, pitiless and impoverishing. On the other hand, I remark that in many portions of the Union there are extensive tracts which would be considered opulent and well ordered in any European kingdom. In the absence of turnips, potatoes, and mangold wortzel, the English traveler is gratified by the spectacle of the Indian corn, tobacco and the vine, and, further South, by the cotton plant, the rice field and the cane, all magnificent and lucrative productions, unknown to British hus-

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bandry. There is also a greater abundance of fruit trees; the breed of horses equals that of the mother country, (I speak with respect, so near the birth place of Sir Archy,) except, I think, for the purposes of heavy draft; and the various races of cattle, replenished by importations of the best blood of England, will be propogated without degeneracy, and will prove formidable rivals to the parent stock.

In a country where human labor is exhorbitantly expensive, the greatest ingenuity is exerted in the improvement of tools and the invention of mechanical aids and substitutes; and in this respect the triumphs of American contrivance are not only profitable at home, but are recognised and adopted by foreign nations. Much, gentlemen, has been accomplished, and the future will furnish still higher results. If we regard the dissemination of intelligence, the diffusion of taste for rural pursuits, the increased application of capital, the scientific inspection of soils, the discriminating use of manures, the development of the home market, and the general establishment of competetive exhibitions, we may safely affirm that American agriculture has entered upon a period which will not only be reparative where the past was exhaustive, but which will gradually carry the land in every quarter to a high pitch of productiveness and beauty.

Mr. Chairman and gentlemen, her Majesty, the Queen, will be gratified in learning that her character and dignity are held in honor in this ancient Commonwealth, which owes its foundation and its name to the most illustrious of her predecessors, and which was long connected, by peculiar ties, with the loyal houses and the throne of England. It has been asserted by a historian of our great rebellion, in the seventeenth century, that in the outset of the conflict the question of right was so uncertain that an honest man might have taken part with either side. It may be added, that while we recognize the virtues of both factions in misfortune, we cannot exonerate the ascendancy of either from reproach. In the fluctuations of that struggle the continent of America was open to the victims of alternate tyrannies, and gave an impartial welcome to the persecuted Puritan and the proscribed Cavalier; but the sovereigns of England, and those who descend from the adherents of the royal cause, should not forget that the exiled survivors of Marston and of Worcester rebuilt their ruined altars, and restored their ravaged halls in the hospitable bounds of the Old Dominion. Gentlemen, long may Virginia flourish; and while she preserves the traditional virtues of

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an open hand, and a warm courageous, patriotic heart, may she attain that industrial prosperity to which she now aspires, and of which nature has bestowed on her the abundant elements.

Gentlemen, before I sit down, permit me to call upon you to drink the health of Gen. Tilghman, the President of the United States Agricultural Society.

Lord Napier took his seat in the midst of vociferous and long continued cheering.

President TILGHMAN responded in an eloquent manner,* acknowledging the great benefits which our country has derived from the introduction of improved animals from England, as illustrated by the present exhibition. In conclusion, he paid an eloquent tribute of praise to the agriculturists of Great Britain, and proposed: "The health of his grace the Duke of Marlboro', the President of the Royal Society of England."

Hon. B. P. JOHNSON, Secretary of the New York State Agricultural Society, was called upon to respond to this sentiment, he having attended a meeting of the Royal Society, when in England as Commissioner of the State of New York at the World's Fair. His humorous account of his reception on that occasion was received with loud cheering, and after expressing a hope that in future these American Exhibitions might be extended to the extreme Southern sections of the Union, he gave a sentiment complimentary to the "State of Louisiana."

J. B. DE BOW, Esq., made an eloquent response in behalf of the State of Louisiana and of the Southwestern section of the Union. In concluding his remarks, he gave—"The mighty Northwest, the mother of States—(so prolific that we needs must restrict their numbers)—the granary of our country; her teeming products combined with those of the South and the Southwest, and support the manufacturing regions of the Union and supply the materials of the commerce of the world."

Gen. WM. DUANE WILSON, of Iowa, responded to this sentiment, and after alluding briefly to the progress of agriculture in the far Northwest, concluded by giving—"The Palmetto State." [Cheers.]

Col. BENJ. ALSTON, of South Carolina, responded, thanking the gentlemen present for the manner in which they had complimented his native State. He gave as a sentiment: "The small yet great

*The necessity of keeping this publication within the prescribed limits, has rendered it necessary to abridge the remainder of this report.

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State of New Hampshire, which has produced Webster, Woodbury, Pierce and other prominent statesmen." [Applause.]

Hon. FREDERICK SMYTHE, of New Hampshire, was loudly called upon to respond, which he did in an off-hand, pleasant speech, expressing his interest in the prosperity of the United States Society, and the gratification which it afforded him to attend its exhibitions in different States. He gave as a sentiment: "The State of Maryland."

EDMUND L. ROGERS, esq., one of the editors of the *American Farmer*, made a handsome acknowledgement in behalf of the State of Maryland, in which he took occasion to briefly review her many and eminent services in the cause of agriculture. He gave: "The name of one—whether in the field of Ceres or the orchard of Pomona, alike pre-eminent—the Hon. Marshall P. Wilder, Ex-President of the United States Agricultural Society."

This toast was "drank with all the honors," and the Secretary of the Society, Mr. POORE, was called upon to respond. So doing, he endeavored to bear testimony to Col. Wilder's eminent services in the formation of the United States Agricultural Society, and in conclusion, gave a sentiment complimentary to "the Press."

Loud calls were made for O. JENNINGS WISE, editor of the *Richmond Enquirer*, and when it was ascertained that he had left the hall, for Mr. O'MOHANY, the local reporter of the same paper. He returned thanks, and called upon Mr. LLOYD, of the *Richmond Examiner*, who in his turn, after a few remarks, called upon Mr. KEAN, of the *New York Herald*, by whom a witty review of the newspaper comments upon the exhibition was given.

Mr. WARD, of Massachusetts, desired to offer the following sentiment, left with him by Gen. WILLIAM SUTTON, who had been present as a Delegate from the Massachusetts State Board of Agriculture: "*The Great Fair of the Union*: it has different fields, east, west, north, and south; but the true American farmer will cultivate and cherish all with the same care and love, well knowing that the interests of each are identical, and that the true welfare of the whole is dependent upon the prosperity of the several parts." This sentiment was received with loud applause.

Col. H. C. CABELL toasted mine host of the Exchange, Mr. JOHN P. BALLARD, for which that gentleman returned thanks.

Col. T. P. AUGUST was next called upon, and after a few humorous remarks, which were happily received, gave: "The Union of

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the agricultural, mechanical, maritime, and all other interests of the country, for the sake of the Union!"

Thus, to use the words of the *Richmond Dispatch*, "terminated a very pleasant festival—gratifying both in respect to its intellectual pleasures and its provision for the satisfaction of the inner man."

FIFTH DAY.—*Saturday, October* 30.

The rain continued to fall, materially interfering with the enjoyment of the Fair, and seriously diminishing the recipts. The committee-men, however, concluded their examination, and there were fine displays of horses on the track.

At noon, the President gave permission to exhibitors to remove their stock, machinery, and other articles. The flags were lowered, the band played "Auld Lang Syne," and the Seventh Annual Exhibition of the United States Agricultural Society became a matter of record.

LIST OF DELEGATES IN ATTENDANCE.

British Possessions.—*Board of Agriculture of Upper Canada.*—Col. E. W. Thomson, President.

New Hampshire.—*State Agricultural Society.*—Hon. Frederick Smythe, John T. Coffin.

Massachusetts.—*State Board of Agriculture.*—Maj. General Sutton, of Salem; Secretary Flint, of Boston; C. Atwater, Esq., of Springfield. *Essex County Agricultural Society.*—Eben Sutton, of Salem. *Hampshire County Agricultural Society.*—Leander Wetherell. *Worcester Agricultural Society.*—Otis Adams.

New York.—*State Agricultural Society.*—Hon. W. T. McCoun, (President;) Hon. Henry Wager and Secretary B. P. Johnson, (ex-Presidents;) George Clarke, W. Akenhead, C. S. Wainwright, Samuel Horne, Francis M. Kotch, esqrs., and Hon. Benj. N. Huntington. *Mechanics' Institute of New York City.*—J. S. Cutter.

Pennsylvania.—*State Agricultural Society.*—David Taggart, A. E. Kapp, George Merrick, and B. N. Posey. *Philadelphia Agricultural Society.*—Sidney G. Fisher, Samuel Willitts, Chas. W. Harrison, Morton McMichael, D. B. Kershaw, and A. M. Spangler. *Chester County Agricultural Society.*—Dr. E. C. Evans, Benjamin Hickman, Amos A. Darlington, Thomas S. Woodward, and Henry W. Caruthers. *Berks County Agricultural and Horticultural Society.*—Rev. J. Shrigley, Wirt Robinson, and Michael K. Boyer. *York County Agricultural Society.*—Philip A. Small and Henry A. Hantz.

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MARYLAND.—*State Agricultural Society.*—John Merryman, J. H. McHenry, Oden Bowie, W. C. Wilson. H. J. Stranberg, Martin Goldsborough, F. Harrison, and E. L. Rogers.

VIRGINIA.—*Seaboard Agricultural Society.*—Col. Wm. B. Whitehead, Fielding L. Taylor, F. Wilson, Capt. Jas. Cormick, Jas. S. Garrison, Sith Morel, W. S. Butt, and John G. Turpin.

NORTH CAROLINA.—*State Agricultural Society.*—H. K. Burgwyn, Nich's L. Williams, John S. Daney, David Hinton, R. R. Bridgers, and Robert W. Lassiter. *Granville County Agricultural Society.*—Col. P. E. A. Jones, Col. S. S. Royster, Dr. G. W. Blacknall, and T. J. Blacknall.

SOUTH CAROLINA.—*State Agricultural Society.*—Col. A. J. Green, Columbia; Dr. J. R. Sparkman, Georgetown; Col. Ben. Allston, Georgetown; Gen. S. R. Gist, Union Village; and Dr. J. A. Metts, Clinton.

GEORGIA.—*State Agricultural Society.*—Wm. A. Carr, esq., Athens. *Southern Central Agricultural Society.*—Richard Peters.

ALABAMA.—*Agricultural and Mechanical Association.*—Dr. N. J. Huston and Maj. Ira E. Hobbs.

MISSISSIPPI.—*Noxubee Co. Agricultural Society.*—N. H. Harrison.

IOWA.—*State Agricultural College and Farm.*—W. Duane Wilson.

PREMIUMS AWARDED.

A list of the premiums awarded at Richmond will be found in the *Monthly Bulletin* annexed, pages 74–81, with the exception of those awards upon which the Executive Committee reserved their decision. It is earnestly desired by the Secretary that all to whom medals are awarded, who may not attend the annual meeting to receive them, send an order to have them transmitted by express or otherwise.

Cuts and brief descriptions of all implements or machines which receive premiums from the United States Agricultural Society, are inserted in the succeeding volume of Transactions, free of charge.

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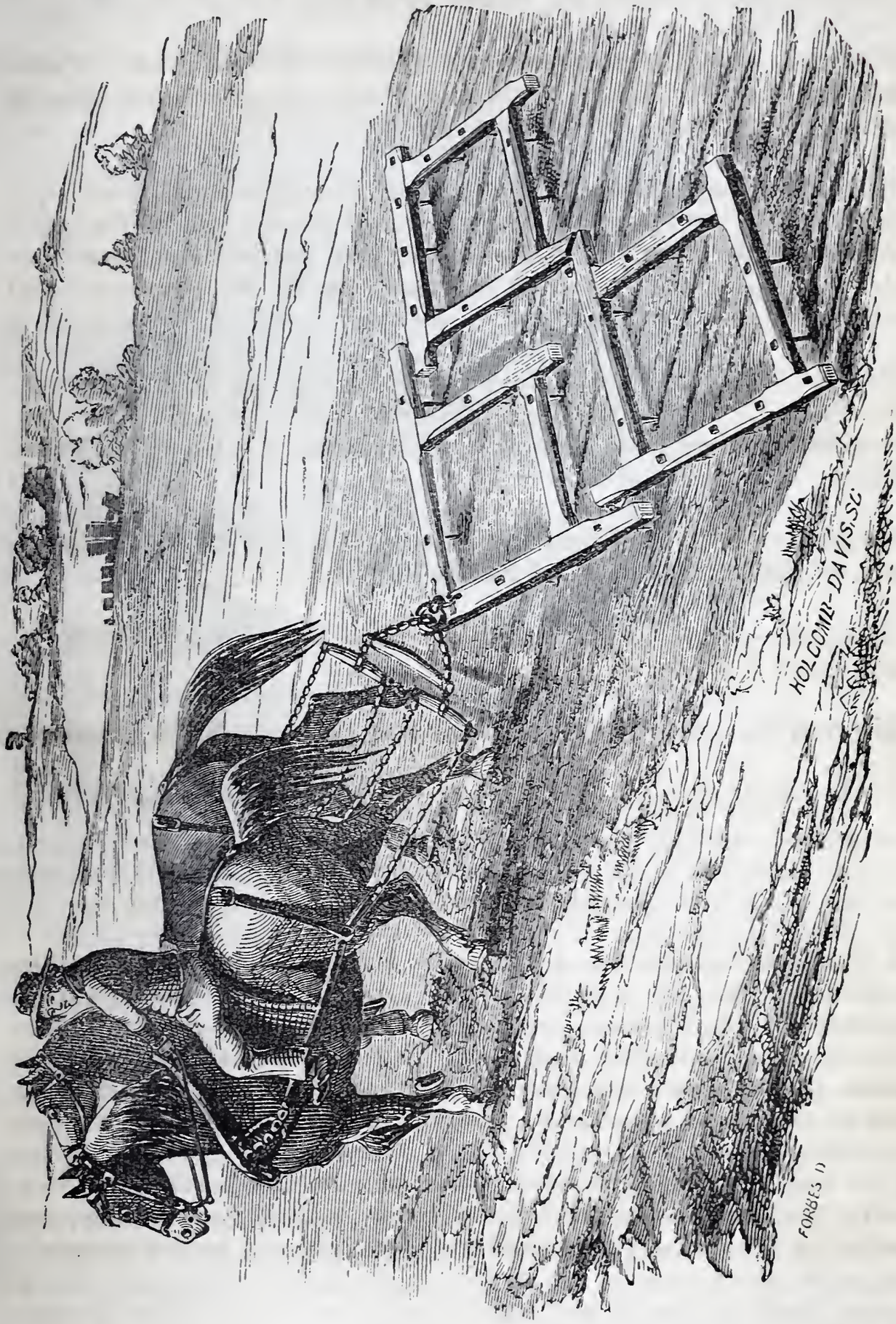
RAMSAY'S UNIVERSAL FLEXION HARROW,

Which received the First Premium of a Silver Medal.



This Harrow, exhibited by the manufacturer, H. M. Platt, of 4 Liberty Place, New York, is a most perfect implement. Owing to its great flexibility and peculiar distribution of the teeth, it neither skips ground nor chokes with weeds, stones, or sticks; gently bends to the uneven surface, and permits all truck to pass through under the Harrow. It is made in three parts, joined by hooks and eyes.

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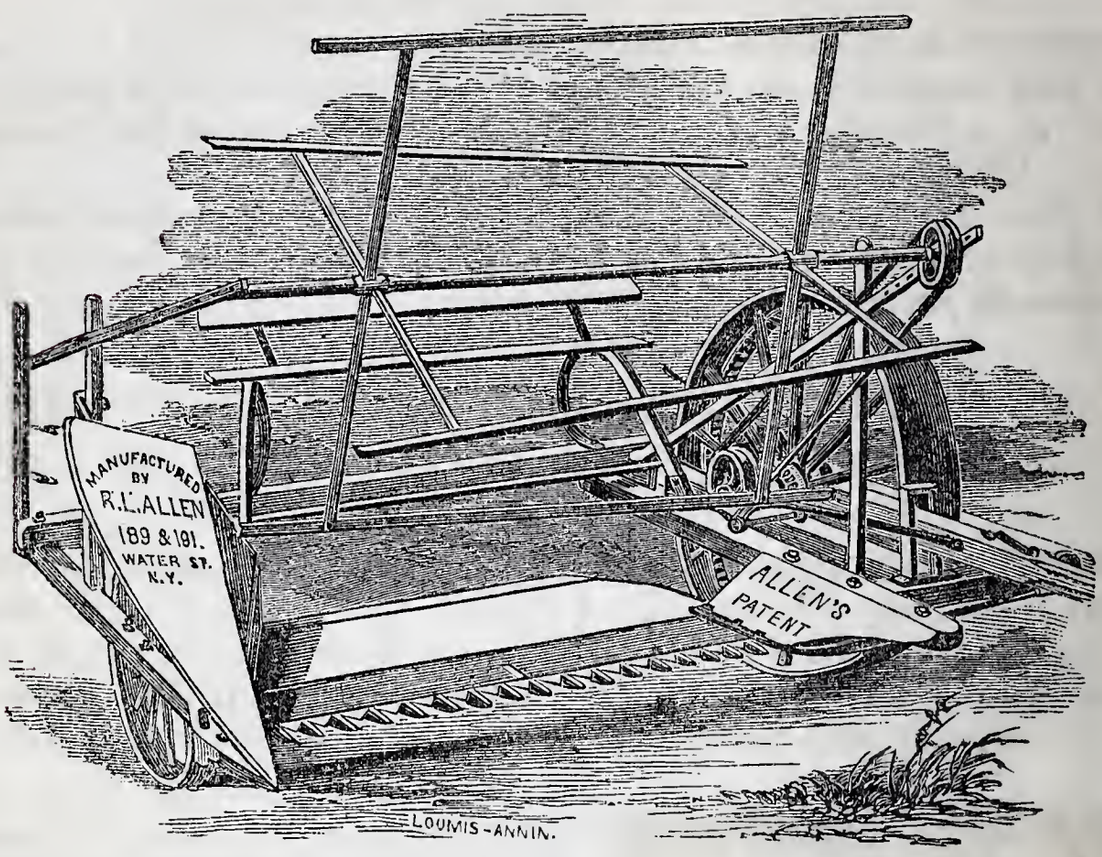
ALLEN'S LARGE SOUTHERN REAPER,

Which received the First Premium of a Silver Medal.



The advantages of this Reaper were thus presented to the committee by its proprietor and exhibitor, Mr. R. L. Allen, of New York:

1. The large diameter of the driving wheel, together with its very broad tire and light material, enables the machine to be drawn over a *wet*, *miry soil*, and across *wide*, *deep ditches* and water-furrows, with a single pair of small horses or mules, which can be done with no other Reaper with less than four mules or horses.

2. It cuts any grain equally well, whether light or heavy, from four to twenty inches above the ground, as desired, and at any pace of the team, varying from a slow walk to a fast trot.

3. The grain is readily raked or pitched off, falling with even butts and clear of the track; thus rendering it unnecessary for binders to follow and take up the sheaves as fast as cut.

4. The machine is readily balanced by the driver, thus preventing all bearing on the necks of the team.

5. The cutting apparatus can be instantly and easily raised to pass over any object desired, by the driver leaning back in his seat, and is instantly lowered by again throwing himself forward. This is a great desideratum in harvesters.

6. Seats for the driver and raker are safe and comfortable. The platform is so narrow and low, the grain is raked off with uncommon ease and facility.

7. The direct draft is lighter than any machine known, cutting so wide a swath—six feet—and carrying its driver and raker. It has been tested repeatedly by dynamometer, and proved to run only

from 450 to 550 lbs.; averaging in heavy grain, on dry ground, not over 500 lbs., which is a very light draft for even a small pair of horses or mules. The side draft is little or none.

8. The knives do not clog in any undergrowth, such as the partridge pea, grass, or clover, even when wet.

9. This Reaper is so simple in its construction as to be put together with facility, and yet is so strong as to stand the roughest usage. The most ignorant laborers can work it.

10. The finger-board can be taken off in a few seconds, and the side-piece and wheel bolted close to the frame. The machine thus becomes as portable as a cart or wagon.

HOWE'S IMPROVED PLATFORM WEIGHING SCALES,

To which were awarded the First Premiums of a Silver and a Bronze Medal, for best Large and Small Scales.

These Platform Scales, of the "Strong & Ross" patent, are manufactured by John Howe, jr., of Brandon, Vermont, and sold by Frank E. Howe, at the New York Scale Warehouse, No. 438 Broome street, New York, by whom they were exhibited at the Richmond Exhibition, and who presented the following account of them:

Fig 1

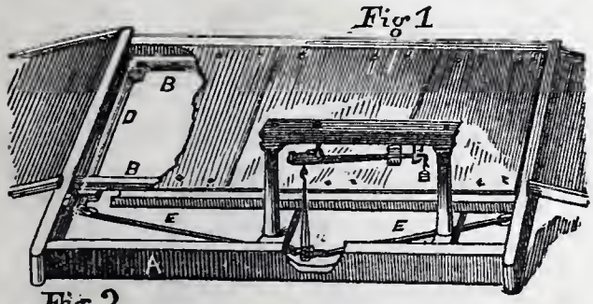


Fig 2

In this invention, the long under bracing and the levers generally required for Platform Scales, are dispensed with, rendering the pit in the ground unnecessary. The construction is also greatly simplified and cheapened. A in *Figure* 1, is the frame. B B are ends of beams, each resting on two iron balls, seen in *Figure* 2. These balls rest in cavities in an iron T piece, which stands on a knife-edge on the end of crank C, which turns on shaft D, depresses lever E, and move the scale-beam. No matter how slight the movement, the short end of the scale-beam will be depressed; by putting weights on the graduated arm, the proper counterpoise will be obtained, and the correct weight of all articles placed on the platform indicated. This method of connection gives free movement to the parts in all directions without friction, and yet keeps them all in proper place; the use of check-rods is also unnecessary, for the platform does not rest rigidly upon the knife-edges, and therefore there can be no direct shock or wear upon them. When a very heavy load is placed upon the platform, its beams are likely to bend, and in common scales this bending pulls the levers, causing them to vibrate more or less than the true weight. The use of balls under the ends of the platform-beams totally obviates this objection, and renders a perfect accuracy of finish unnecessary. The chief features of this patent are thus summed up, in a report from the Franklin Institute of Philadelphia:

1st. When the platforms are set level with the surface of the ground, they require a pit of but 12 inches in depth; this is a great

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desideratum where the ground will not admit of drainage, and a great economy of expense, and time, in setting up. (The usual form require 3½ feet depth of pit.) They will act just as well if set upon the surface of the ground.

2d. The perfect adjustability of the knife-edges to their bearings, by which equal pressure on every part of the edge is always secured.

3d. The use of metallic balls, or spheres, in concave cups. The platform resting on the balls, will thus yield to any sudden jar or lateral motion, without jamming or abraiding the knife-edges. These protections are not used in any other scale.

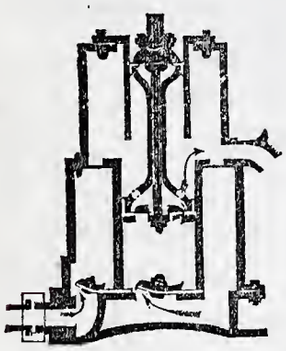
4th. Perfect simplicity, requiring but two levers, one at each end of the platform, instead of a multiplicity of them.

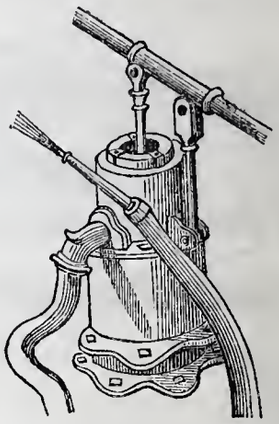
5th. The levers occupying the ends, allows the middle of the platform to be used for a coal scuttle, or for any other similar purpose.

6th. The scales can be adapted to an incline, and made to operate with perfect accuracy.

WEST'S IMPROVED PUMP,

Which received the First Premium of a Bronze Medal.





This pump, exhibited by its manufacturers, Messrs. Gay & West, of 118 Maiden Lane, New York, was commended for its extreme simplicity of construction, great strength, and consequent durability and cheapness of repair. Although it has but two valves necessary to its action, (an additional foot-valve being put in for greater security,) it is perfectly double-acting, throwing a continuous stream with great force. There is no stuffing-box in this pump: the pressure being held by a cup-packing, like that upon the working piston, working in a cylinder, fitted for the purpose, within the upper air chamber, which was regarded as a great improvement, as stuffing is so liable to be deranged, and the leak under a strong pressure, to say nothing of the great loss by friction incident thereto. It has also two air-chambers—the one, as before mentioned, surrounding the upper cylinder, and communicating with the pump above the valves, the other surrounding the lower or working cylinder, and communicating below the valves; thus the action of the valves is cushioned upon both sides by air, preventing water-hammer and vacuum thump, and enabling a much smaller and less expensive pipe to supply the pump. The valves are very accessible, and simply and cheaply repaired.